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ABSTRACT

Materials are presented from a seminar that brought together practicing German and British educationalists to compare the differing curriculum decisions and implementation processes in England and Wales with those in the Federal Republic of Germany. A foreword provides the objectives, methods, and funding bodies. Section 2 is a comparative introduction to the text that makes recommendations for further study. Detailed comments on the formal structure of technical and vocational education in the Federal Republic of Germany are offered. Specific topics are the upper secondary vocational school system, vocational training at upper secondary level outside schools, and curriculum processes. Section 4 is a glossary of terms used in the three specialists reports. The next three sections contain the reports of the technician education, business education, and vocational education groups. Each report describes the structure of the educational system in the two countries as determined from visits and the curriculum and/or curriculum development. Section 8 presents the conclusions and suggestions for further study from each of the three groups. The final section includes the seminar timetable with a list of institutions studied during the seminar and a list of membership in the seminar. (YLB)

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COMPARATIVE PAPERS IN FURTHER EDUCATION NUMBER TWO
1979

The Anglo-German Report on Curriculum Development for Vocational Education

Edited by Jean Finlayson, David Parkes and Russ Russell

Contents

ACKNOWLEDGEMENTS 1

Section 1 : FOREWORD: OBJECTIVES, METHOD AND FUNDING BODIES 2

Section 2 : A COMPARATIVE INTRODUCTION TO THE TEXT: SOME RECOMMENDATIONS FOR FURTHER STUDY 4

Section 3 : TECHNICAL AND VOCATIONAL EDUCATION IN THE FEDERAL REPUBLIC OF GERMANY AND ENGLAND AND WALES 7

Section 4 : A GLOSSARY OF TERMS USED IN THE THREE SPECIALIST REPORTS FOR WEST GERMANY, ENGLAND AND WALES 17

Section 5 : REPORT OF THE TECHNICIAN EDUCATION GROUP 24

Section 6 : REPORT OF THE BUSINESS EDUCATION GROUP 39

Section 7 : REPORT OF THE VOCATIONAL EDUCATION GROUP 54

Section 8 : CONCLUSIONS AND SUGGESTIONS FOR FURTHER STUDY 72

Section 9 : SEMINAR TIMETABLE AND LOGISTICS 78

In the four years since this report was written, the Further Education Staff College has organised several visits to the Federal Republic of Germany for British experts in vocational education and training. Their published reports are listed on the inside back cover. They cover a wide range of topics.

Despite changes in both German and British vocational education and training over the past four years, this report continues to be of interest in that it makes what is probably still the most detailed available comparison of curriculum processes as seen from the perspective of the vocational teacher. For that reason it has been decided to reprint this report without revision. The title has been changed to clarify the original purpose of the report in the context of our new series of Studies in Vocational Education and Training in the Federal Republic of Germany.

Russ Russell
Staff Tutor,
Further Education Staff College
August 1983

ACKNOWLEDGEMENTS

This report comes from a seminar which grew from an idea discussed between the Further Education Staff College and the British Council. After a formal application for extra funding was made by the staff college to the British Council and the Anglo-German Foundation, more detailed planning commenced. The programme of the seminar remained the responsibility of the staff college, but the work would have proved extremely difficult or impossible without the generous advice and help from a large number of people, too many to name. Thanks must be extended especially to John Whybrow, British Council officer in Köln, who undertook with Russ Russell the initial planning visits in May 1978. Mr. Whybrow took the fullest possible part throughout the planning and operating phases of the whole seminar and his hard work, diligence and patient insight are here acknowledged.

Dr. Püttman, in both of his roles in KMK and in Nordrhein-Westfalen, is also acknowledged for his active assistance and facilitation and in acquiring generous hospitality. Without his intervention at various points progress may well have been halted.

Our thanks are due to all participants in the seminar for their hard work, penetrating questions and for the provision of the body of the report itself. We are also grateful to the numerous staff of the institutions visited in the two countries concerned.

Acknowledgement is also due to Allan Jones, a British Council officer then attached to the London office, for his work and endeavours in planning and in the final seminar.

Finally, no list of acknowledgements would be complete without recognition of the continued work of the secretaries who keep the work moving; in this case Sonja Krautbauer in Köln and Gill Griffin and Sheila MacNicol at Coombe Lodge.

David Parkes
Russ Russell

Staff Tutors,
Coombe Lodge.

SECTION ONE

FOREWORD: OBJECTIVES, METHOD AND FUNDING BODIES

The exercise was funded jointly by the Further Education Staff College, the Anglo-German Foundation for the Study of Industrial Society, and by the British Council. The seminar benefited also from the generous provision of hospitality and accommodation by the Länder of the Federal Republic.

The intention was to bring together practising German and British educationalists to compare the differing curriculum decisions and implementation process in England and Wales with those in the Federal Republic of Germany and to produce a report making detailed comparisons: the report to be the basis of further dissemination conferences and further comparative study.

The exercise was designed to consider both the locus of key curriculum design and implementation decisions as well as the range of information considered in those decisions. It was necessary to meet educationalists both from the teaching institutions and from central agencies or ministries. A particular problem in both countries is that of trying to achieve an acceptable balance of general educational needs with specific vocational needs, not only in design but in implementation and examinations. It was further intended that the exercise should focus on detailed reality as experienced and perceived by the participants, no matter how inelegant the final result might be. To assist this focusing three occupational groups, common to both countries, were selected so that three working groups could be formed to look in detail at vocational education in the following areas:

1. Mechanical and production engineering technicians
2. Intermediate and low level business administrators
3. Young people with low level qualifications, seeking a vocational foundation, or orientation.

In terms of educational programme a suitable comparison was felt to be:

England and Wales	Federal Republic of Germany
1. Programmes for the Higher TEC Awards in Mechanical & Production Engineering.	1. Programme für Staatlich Geprüfter Techniker in Fachschulen.
2. Programmes for General Diplomas and Ordinary Certificates of the Business Education Council.	2. Berufsgrundbildungsjahr, Rahmenlehrpläne und Ausbildungsordung für Industriekaufleute.
3. New programmes including Foundation Courses of the City & Guilds of London Institute.	3. Neue programme für Berufsvorbereitungsjahr und Berufsbefähigungslehrgänge

A party of 16 from England and Wales, working in institutions closely concerned with the above groups, were selected and organised into three groups. After meeting for briefing they visited a series of institutions in the Federal Republic of Germany, returned to England and drafted their report. A party of 15 selected largely from institutions visited in Germany, after a briefing meeting, visited a series of institutions in England and Wales. Both parties visited and received witnesses and speakers from a wide range of institutions which are detailed in Part Nine of this report. They finally met together in Coombe Lodge, the Further Education Staff College, to comment on and re-draft the three group reports. The reports were initially drafted by the visiting experts of the English and Welsh group and validated by their colleagues from the Federal Republic of Germany.

SECTION TWO

A COMPARATIVE INTRODUCTION TO THE TEXT: SOME RECOMMENDATIONS FOR FURTHER STUDY

There is always a difficulty in making comparisons among specific education topics contained within systems developed from singular historical and cultural contexts. "How did you get to this point?" is an important question. Its significance is intensified when Kantian reason and Humean empiricism appear to have led Germany and the United Kingdom to the same pass. This comparative exercise bears this difficulty in mind when defining broad objectives:

- To establish how the two systems work in practice in the interstices rather than the elaboration of formal structures; the purposes, satisfactions and dissatisfactions of the protagonists.

- To identify assonance and dissonance between the systems.

- To identify more clearly aspects of the system that are taken for granted in each.

- To identify common trends and problems and perhaps identify policy or action alternatives.

- To begin to identify issues and problems which will arise when negotiations start on levels of qualifications.

Some attention had to be paid to structures. The price paid for an over-concentration on the latter is a lack of focus - consequently a real effort was made to compare curricula in terms of objectives, content, standards and assessment.

The operating definition of the curriculum is that it is the learning that takes place as a direct consequence of the interaction between students and teachers. This definition recognises that frequently any curriculum statements from central bodies need further detailing in practice and it helps us see teachers as part of the process rather than mere (recalcitrant?) instruments. In addition it is widely accepted that not only should the curriculum be relevant to the real world of work, but it should be seen to be so by the students. For these reasons both English/Welsh and German parties were selected to include a large representation from the teaching institutions and it was to help make the focus specific, rather than at a broader level of generality, that three specific occupational groups were included.

General conclusions and suggestions for future study are included by each group towards the end of the text. The major difference between West Germany, and England and Wales, is that the former has more elements of central control and most of the differences in detail stem from this. Both Federal and Länder governments have curriculum centres and regulatory procedures, whereas the relative diffusion of the English model - focussed an institutional autonomy - means that central agencies are more validatory than examining bodies. The fact that the funding agency and the curriculum agency are one and the same in West Germany allows resources to be deployed more coherently than in England. The West German system appears to devote an impressive volume of resources to curriculum development and acknowledges that the process has been planned and timed if any development is to be successful. On the other hand it may be that the adoption of certain methods of categorising the curriculum, while they may contribute to clear organisation, may also embody some unconsidered assumptions about the learning style of young people. However, both systems appear to be moving towards a systems based curriculum methodology.

The English training pattern is also less coherent than the West German. The English, unlike the Germans, have no mandatory educational framework for apprenticeship, nor do they necessarily provide for a final examination or test of competence. There is no legislative obligation for an employer to provide systematic training for skilled industrial or commercial occupations.

Certainly the teams from the Federal Republic were struck by the non-compulsory aspect of 16-18 provision in the United Kindom. On the other hand they admitted to be questioning, still, their own compulsory system on the issues of whether a youth's duty is to attend school or whether it is his/her right to leave an apprenticeship or day release course. Most* German school leavers enter apprenticeship, while only 18 per cent do so in England and Wales. The take up among 460 trade categories allows a healthy range of opportunities.

Some recommendations for further study: the specifics appear in the text. It was clear to the West German teams they were seriously beginning the preliminary exercise to hard bargaining on equivalents of qualification within the European Community. Consequently they would like opportunities to examine in more detail: equivalence and level, content and method.

*Most school leavers get apprenticeships, ie 85 per cent of those leaving Hauptschule after year 9, age 15+ virtually all of those leaving Realschule after year 10, age 16+ But, in some States over 50 per cent of the Hauptschule 9th year age group are now staying on for a 10th school year in Hauptschule (or transferred to Realschule) and nearly 20 per cent of the 16+ age group are staying on in Gymnasium Oberstufe and Fachoberschule or other full-time vocational schools (Berufsfachschule, Berufskolleg, Berufsgrundbildungsjahr etc).

What other general conclusions and recommendations for action emerge? It would now appear that large numbers of good professional contacts exist between the two systems and that knowledge of the formal structure as well as its detailed workings is more widespread and accessible. On the basis of these contacts and emperiences more detailed studies are possible. Recommendations for such detailed studies are included in section eight of this report. They may well be undertaken in a variety of ways - by a single individual, or a pair of individuals - and produce a valuable report or recommendation. Studies that require formal recognition as an end point may be started by an individual but will need some authoritative validation at the end. If such is the case, then a competent or authoritative body may need to take an initiative to commission one of the more detailed studies recommended. Readers of this report are encouraged to pay particular attention to section eight and to ask, "Can I initiate some further action or study, either individually or via a competent authority with which I am associated?"

SECTION THREE

TECHNICAL AND VOCATIONAL EDUCATION IN THE FEDERAL REPUBLIC OF GERMANY AND ENGLAND AND WALES

This report has been drafted on the assumption that the reader is moderately familiar with the formal structures of vocational education in the two countries and that the reports are an elaboration and commentary on their actual workings. As part of the seminar process the participants were provided with briefing papers and sessions on the formal systems and these (since revised) papers are published separately and are available. Nevertheless it seems useful to make some comment on the systems here and, since the readership of this report is likely to be largely English, to make some more detailed comments on the German system.

Neither of the two systems is unitary and both have various characteristics of co-operation and partnership in dispersed systems. The fundamental key to understanding the German education system is that the country itself is a federal state. Educational matters are one of the important responsibilities reserved wholly to the individual states (Länder) and guaranteed as such by the Constitution or Basic Law (Grundgesetz). The Länder guard their autonomy jealously.

However, the Basic Law of the Federal Republic guarantees the freedom of living, moving and working anywhere within the territory of the Federal Republic; co-operation is therefore necessary between states and with the Federal Republic. Federal jurisdiction has to be transformed into state-level jurisdiction in order to co-ordinate the school and higher educational systems of the individual states with respect to the structures, institutions, curriculum and leaving certificates. The inter-state co-operation in this field of education is accomplished by the Standing Conference of the Ministers of Education and Cultural Affairs (Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland - KMK).

It is important to distinguish between training and education since the former is the responsibility of the Federal Government, whilst the latter devolves to the Länder. The dual system, whereby occupational training proceeds in parallel with the job and school, makes it doubly important that the 11 Länder should agree on the educational requirement. The main task of the KMK in vocational education is to reach such an agreement.

The fundamental structures of the Länder education systems have been standardised by the KMK. These include the designation of the various educational institutions and their organisational form, and the essential elements of curricula (framework) associated with the designated courses.

The KMK hands down course guidelines (Rahmenlehrplan - the curriculum framework) to the individual state which then puts in the fine detail. This is general in the whole field of education. This is further discussed later.

The Federal Ministry of Economics (Bundesministerium für Wirtschaft) has a clear, defined and undisputable responsibility for industrial training. The Federal Ministry of Education and Science (Bundesministerium für Bildung und Wissenschaft) was not established until 1969, long after the Constitution and the KMK. The BMBW's influence over vocational training regulations and finance has increased since the law on Training Places (Ausbildungsplatzförderungsgesetz) of 1977 and it has an enabling power to support and monitor pilot projects. The Federal Institute for Vocational Training in Berlin (BIBB) which carries out pilot research and devises training regulations on behalf of industry and commerce is within the administrative responsibility of the BMBW.

A different situation exists in England and Wales. No one doubts the absolute authority of the Westminster Parliament in educational or any other matters. The Department of Education and Science (DES) in London could therefore have a very high level of authority, but Parliament has chosen to leave educational matters to a series of partnerships. The DES monitors all activity and seeks to influence decisions through a variety of agencies. A vital function of the DES in vocational education is seeing that an adequate, effective and appropriate range of examining bodies exists to influence vocational curriculum in colleges. Each of these examining bodies is controlled by a governing council which represents industrial, educational and teaching interests. Thus the DES has ensured the establishment and co-operation of the City and Guilds of London Institute, the Technician Education Council, and the Business Education Council, although all three are wholly independent - both financially and in their examination and curriculum operations. The 104 local education authorities, although they provide the colleges, are largely outside curriculum operations and decisions.

THE GERMAN UPPER SECONDARY VOCATIONAL SCHOOL SYSTEM

The upper secondary school system in Germany is complex for several reasons:

a. Several types of Berufsbildende Schulen (vocational school) exist and these vary slightly between different Länder;

b. Along with the rest of education, the present system is being altered;

c. For students who opt for part-time education and training, the Länder continue to be in charge of the school element while the Federal Government is responsible for on-the-job training and other forms of training outside schools. This is called the dual system.

Schools

All types of schools are responsible for setting and marking their own examinations.

The main types of vocational schools are as follows:

Berufsfachschule (full-time vocational school)

These are attended by about seven per cent of the age group. They prepare students for a field of employment or provide vocational training, while at the same time improving their general education. Entry requirements are successful completion of Hauptschule or Realschule. The programme takes at least one academic year. Various types of Berufsfachschulen exist, specialising in commerce, child care or technical assistant careers. All courses end with a final examination. In two years Berufsfachschule, where the Hauptschule leaving certificate is required for admission it is possible for students to attain a certificate equivalent to that from a Realschule (i.e. Mittlere Reife) and then proceed to a shortened apprenticeship or take an advanced technician course at a Höhere Berufsfachschule (see below) or Fachoberschule (see below). A full occupational qualification is achieved by only 25 per cent of Berufsfachschule students.

Höhere Berufsfachschule (higher full-time vocational school)

This provides advanced courses for graduates of Berufsfachschulen, without any practical training placements. The most common sort is commercial. The two year courses prepare for employment which will lead to lower or middle management positions, or for entry to Fachhochschule (college of technology) after one year's approved practical training.

Berufsschule (part-time vocational school)

These are attended by students undergoing a vocational training in industry or who are in employment but receive no on-the-job training. They amount to 50 per cent of the age group. General education forms 40 per cent of the curriculum; the remaining 60 per cent is allocated to vocational theory and practice.

Berufsaufbauschule (promotional part-time vocational school)

These are attended by students who are currently doing vocational training or have completed it. Vocational and general subjects are taught at a more advanced level then Berufsschulen and their graduates have the equivalent of "Mittlere Reife" and the entry qualification for "Fachoberschule". The minimum course length is 1300 hours and there are five areas of specialisation, which all include economics and business management:

General commercial/industrial;
Industrial/technical;
Home economics/nursing;
Social work; and
Agriculture.

Fachoberschule (higher full-time vocational schools with practical training)

These are full-time schools comprising Grades 11 and 12 for students who have completed Realschule or the equivalent. The final examination, the "Fachhochschulreife" is the entry qualification for Fachhochschule (college of technology).

Fachschule (advanced vocational schools)

These train mid-level personnel in management. The entry qualification is vocational training up to Facharbeiterbrief or Gesellenbrief level at a Berufsschule or equivalent, plus relevant work experience.

The curriculum comprises general education as well as vocational training. There are six types of Fachschule:

Technicians;
Economics;
Domestic Science;
Social pedagogy;
Agriculture; and
Advanced agriculture.

Full-time courses take at least the equivalent of one full year, and are divided into two or four semesters of half a year each.

VOCATIONAL TRAINING AT UPPER SECONDARY LEVEL OUTSIDE SCHOOLS

The Dual System

The Federal Government is responsible for the regulation of vocational training which takes place outside school. It operates according to the 1969 Berufsbibdungsgesetz (Vocational Training Act) which standardised existing statutory provisions for all Länder and applies to training for industry, agriculture, the civil service, professions and home training.

In addition to training provided by individual employers there are vocational training centres run by such bodies as employers' associations and Chambers of Trade and Commerce. These provide training elements which are required by regulations but cannot be adequately met by individual employers.

According to the Act, young people up to 18 years must be trained in one of 460 legalised training occupations. These form the basis of 40,000 types of job and so attempt to secure job mobility.

The training given for each individual must be according to an agreed, written, occupational training contract between trainer (employer) and trainee, and a standard form is used throughout the Federal Republic. Content and length of training is laid down by Federal Government in vocational training regulations in agreement with the Chamber of Industry & Commerce, and the Chamber of Crafts, Three years is the normal period, though there are some three-and-a-half-year programmes (especially where the courses are modular). An individual's training period may be shorter or longer than the norm, according to particular circumstances.

In accordance with a 1972 agreement, regulations for on-the-job training and the general curriculum for vocational training in schools are developed co-operatively between Federal Government and Länder Governments so that they relate to each other. Appendix C illustrates the process for deciding on the curriculum for a bank clerk's training.

The supervision of programmes, as well as examining, administration and advisory functions, is carried out by the Chambers of Industry & Commerce and Chambers of Crafts. These are self-governing corporations, membership of which is mandatory for all commercial enterprises. The statutory regulations for the practical implementation of training are decided by a Chamber's occupational training committee. This consists of six employers' representatives and six teachers from vocational schools, though the latter have only an advisory function.

Currently 73 Chambers of Industry and of Commerce supervise 634,000 occupational training contracts of 132,000 employers and 43 Chambers of Crafts (Handwerkskammer) supervise 505,000 contracts in 170,000 small businesses.

Place of Training

The responsible authorities, usually chambers of industry, commerce, agriculture, and the professions, determine whether an employer is qualified, according to the regulations in the 1969 Berufsbildungsgesetz, to give training. These cover posts available, equipment, the number of trainees and the training personnel. Instructors must have completed their own training, be at least 24 years old, and be able to demonstrate knowledge of the occupation in question and of training methodology.

Trainees receive a salary, according to trade union agreements, which increases with time. In business occupations, on-the-job training where the trainee is integrated into the operation predominates. The trades and technical occupations make much use of training workshops for basic training before trainees are put on to actual work. Small and specialised businesses often combine in setting up workshops to carry out the full occupational training which their own individual firms cannot provide.

At the end of training, trainees take a final examination administered by the chambers except in certain Länder where for agriculture they are administered by the Ministry of Food and Agriculture. The examination is both written and oral and for technical occupations includes test workpieces or samples of work made under supervision. A pass must be achieved in all areas and may be repeated twice. There is also at least one intermediate examination. The examination board must have at least three members. Employers' associations and teachers are represented in equal numbers and there must also be at least one vocational school teacher on it.

Successful completion of vocational training is necessary for employment at the standard wage and for qualification subsequently as a 'master' after several years' experience and success in another examination. It is also necessary for admission to certain Fachschulen as well as Abendgymnasium and Kollegs preparing adults for university entrance.

CURRICULUM PROCESSES

A key set of problems in any educational structure surrounds the process of establishing and implementing a curriculum. This is particularly difficult in the case of the Federal Republic in the vocational field because of the traditions of the dual system. There is throughout the system a desire to achieve a high level of co-ordination between the two sides, the first part of which is to achieve high compatability between the Ausbildungsordnungen (training regulations), and the Rahmenlehrpläne (framework curricula), (called hereafter "AO and RLP")* as administered in the Berufsschule. To achieve this, a joint Bund-Länder committee was established in 1972 - the Koordinierungsausschuß (Co-ordinating Committee) of the Standing Conference (KMK). It includes representatives of Federal Ministries of Employment and Social Affairs, Economics and Finance, Education and Science, and another ministry responsible for the area of work to which the AO and RLP refer (if necessary), as well as one representative of each Länder ministry or senate.

The tasks of the Koordinierungsausschuß are:

- To agree basic principles for harmonisation of AO and RLP
- To decide in which priority order AO and RLP need updating and which committee should do it.
- To ensure proper feedback to the relevant initiating centre and bodies
- To carry out a final reconciliation between AO and RLP before recommending them for issue by the relevant bodies. (i.e. the Chambers and Education Ministries).

A key resolution of the Koordinierungsausschuß of 1974 established a model process for any one occupation. (This process is illustrated as Appendix C to this paper). It is not easy at present to say how successful this co-ordination has been, since few projects have worked their way through to the stage of implementation in the schools. The Federal Institute for Vocational Training (BIBB) is a very experienced curriculum organisation. Since 1969 it has revised more than 120 AO of the main trades reorganised in the Federal Republic of Germany. Many of the curriculum groups of the Länder are equally experienced since they develop and publish the RLP for each trade for their Land. Meetings between BIBB and Länder teams outside the formal Koordinierungsausschuß are infrequent. BIBB rarely penetrates to the schools direct.

The most controversial of recent federal decisions is the experimental introduction of a one year full-time Berufsgrundbildungsjahr to be taken at the end of compulsory schooling. One purpose of this is to increase adaptability and vocational mobility and as such has the support of many educationalists and trades unionists. Broad common courses (13 at present) are provided for a wide range of recognised occupations (456

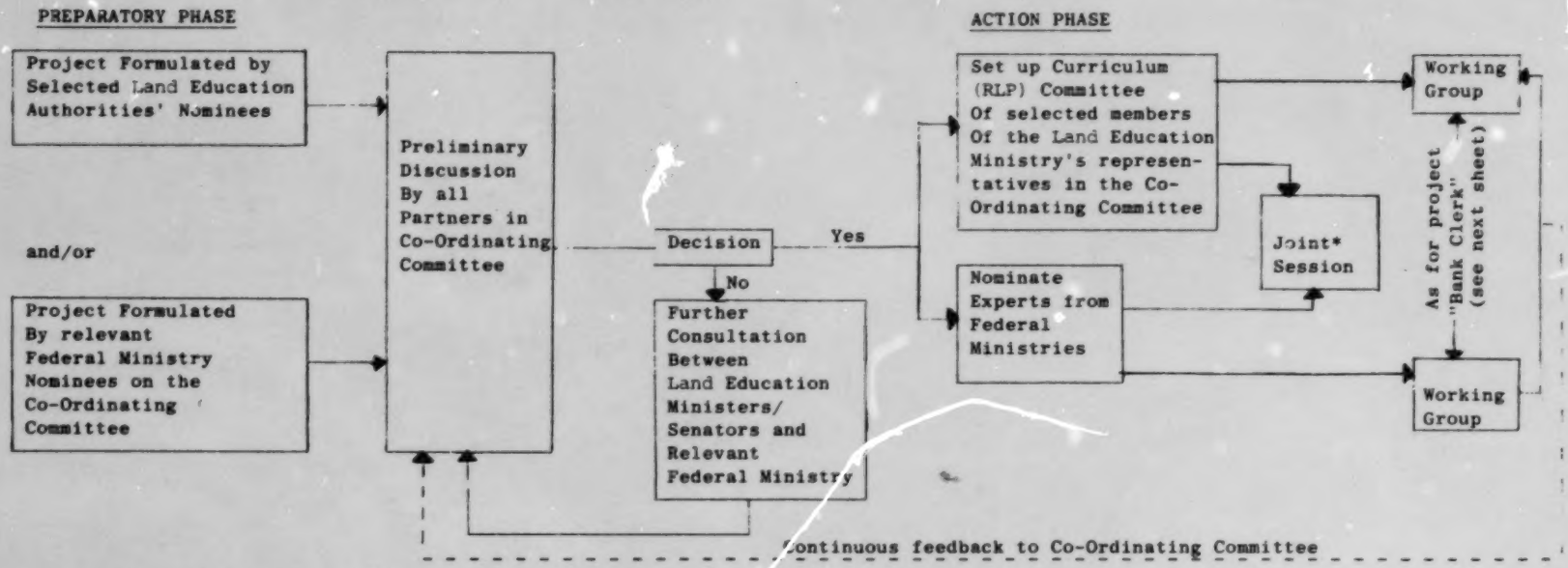
* These abbreviations are not used officially.

at present). Many employers doubt that the existing recognised RLP AND AO can be implemented in the remaining apprenticeship time, particularly if the compulsory school age is raised to 16. Attempts by some Länder to construct a Berufsvorbereitungsjahr as an orientation year to preface a full-time foundation year could confuse the issue.

There is a tendency throughout Western Europe towards introducing vocational orientation programmes at 14+ or 15+ near the end of first stage secondary education. There seems to be widespread dissatisfaction with the programmes of the last years of first stage secondary education, this may be connected to economic uncertainty. Youth unemployment leads to a whole range of special provision of widespread experiments in vocational orientation and foundation courses after compulsory schooling. These experiments, as well as the Berufsgrundbildungsjahr, create co-ordinating problems at the next stage.

APPENDIX C

The Process of Harmonisation of Training Regulations (Ausbildungsordungen) and Framework Curricula (Rahmenlehpläne)
Bund und Länder Decision of 30/5/72 and Co-Ordinating Committee Resolution of 8/8/74.

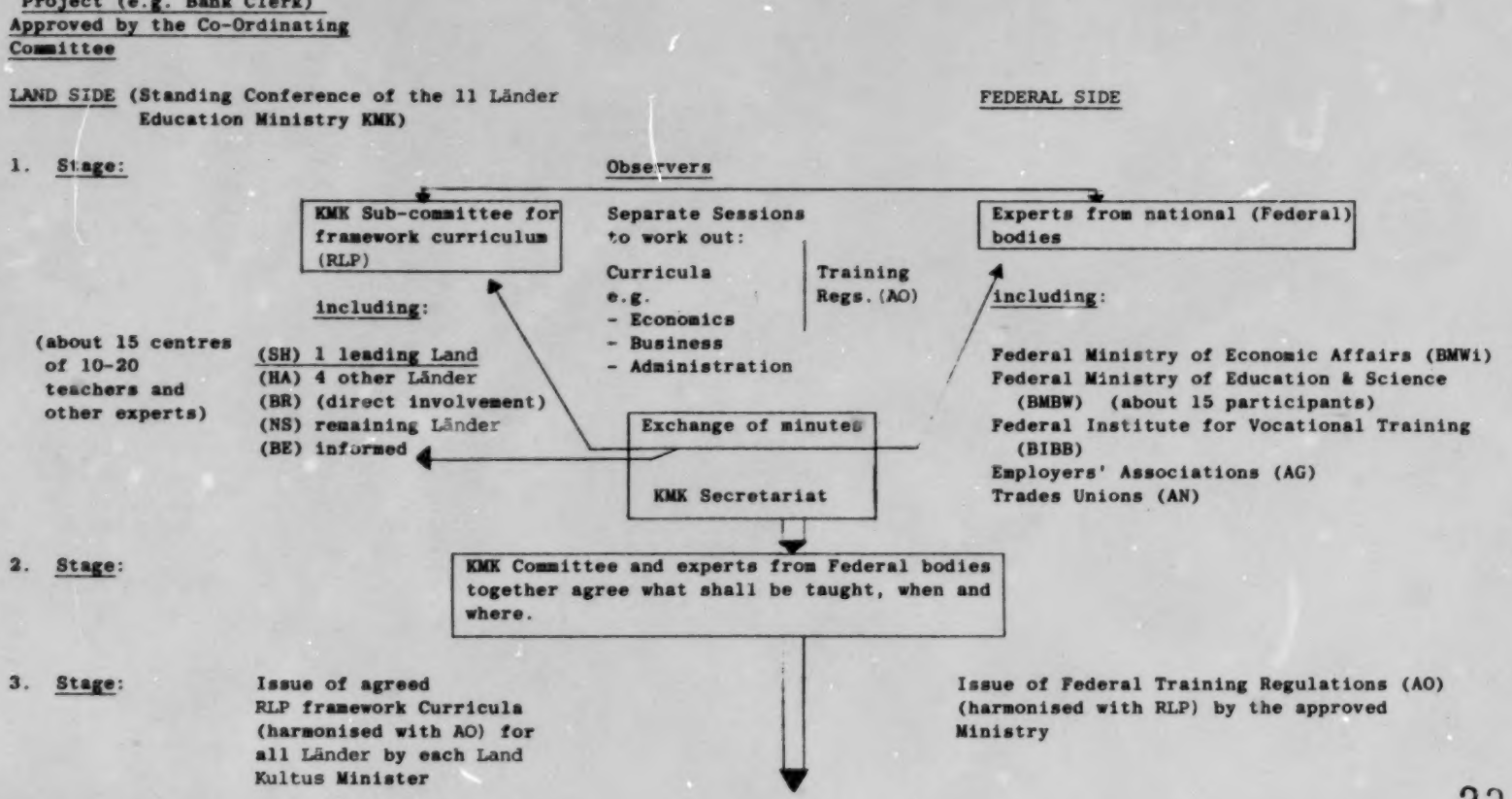

PREPARATORY PHASE
ACTION PHASE
Project Formulated by Selected Land Education Authorities' Nominees
and/or
Project Formulated By relevant Federal Ministry Nominees on the Co-Ordinating Committee
Preliminary Discussion By all Partners in Co-Ordinating Committee
Decision
Yes
No
Further Consultation Between Land Education Ministers/ Senators and Relevant Federal Ministry
Set up Curriculum (RLP) Committee Of selected members Of the Land Education Ministry's representatives in the Co-Ordinating Committee
Nominate Experts from Federal Ministries
Joint* Session
Working Group
As for project "Bank Clerk" (see next sheet)
Working Group
Continuous feedback to Co-Ordinating Committee

*Joint Meeting of Experts:
(Gemeinsame Sitzungen)
Ensure proper harmonisation of AO and RLP. Research carried out by BIBB provides a basis for discussion. The Länder are represented by their own experts and the Federal Ministry can nominate experts from BIBB to represent them. During separate working party meetings on AO and RLP, each side can send an observer to advise the other.

Contact Meetings
(Kontakgepräche) between Bund and Länder representatives take place between sittings to ease the process of harmonisation.

APPENDIX C (Continued)

ACTION PHASE (Expansion of previous page)


Project (e.g. Bank Clerk)
Approved by the Co-Ordinating Committee
LAND SIDE (Standing Conference of the 11 Länder Education Ministry KMK)
FEDERAL SIDE
1. Stage:
Observers
KMK Sub-committee for framework curriculum (RLP)
Separate Sessions to work out:
Curricula e.g.
- Economics
- Business
- Administration
Training Regs. (AO)
Experts from national (Federal) bodies
including:
(about 15 centres of 10-20 teachers and other experts)
including:
(SH) 1 leading Land
(HA) 4 other Länder
(BR) (direct involvement)
(NS) remaining Länder
(BE) informed
Federal Ministry of Economic Affairs (BMWi)
Federal Ministry of Education & Science (BMBW) (about 15 participants)
Federal Institute for Vocational Training (BIBB)
Employers' Associations (AG)
Trades Unions (AN)
Exchange of minutes
KMK Secretariat
2. Stage:
KMK Committee and experts from Federal bodies together agree what shall be taught, when and where.
3. Stage:
Issue of agreed RLP framework Curricula (harmonised with AO) for all Länder by each Land Kultus Minister
Issue of Federal Training Regulations (AO) (harmonised with RLP) by the approved Ministry

SECTION FOUR

A GLOSSARY OF TERMS USED IN THE THREE SPECIALIST REPORTS

A.	West Germany	18
B.	England and Wales	21

A. WEST GERMANY

Allgemeinbildende Schule : general education school

Arbeitslehre : school subject area - "Introduction to the World of Work"

Abschluß : final examination or certification

Arbeitsamt : local office of employment of the Federal Institute of Labour

Abteilung für Lehrplanentwickling im Beruflichen Schulwesen : Department for curriculum development in vocational education

Ausbildungsordung : training regulations

Abitur : university entrance examination

Berufsfeld : trade specialism

Bürogehilfin : office assistant

Berufsbefähigungslehrgäng : vocational preparation course

Berufsbildende Schulen : FE schools or colleges

Berufsschule : vocational school (part-time)

Berufsfachschule : vocational school (full-time)

Berufsaufbauschule : vocational school (more specialist vocational school full and part-time)

Berufskolleg : full-time specialised vocational school in Baden-Württemberg (similar to Fachoberschule in other Länder)

B.M.B.W. Bundesministerium für Bildung und Wissenschaft : Federal Ministry of Education and Science

Bund-Länder-Kommission für Bildungsplanung und Forschungsförderung : commission for educational planning and the advancement of research

B.I.B.B. Bundesinstitut für Berufsbildung : Federal Institute for Vocational Education

Berufsbildungsgesetz : vocational training act

Berufsgrundbildungsjahr : basic vocational training year introduced as an experiment in 1973. It has two forms (1) full-time, in vocational school (when it is sometimes called Berufsgrundschuljahr) (2) co-operative, partly in school, partly in factory.

Berufsvorbereitungsjahr : preparation for weaker students for basic vocational training year

Bund : Federation

Bundesministerium : Federal Ministry

Fachabitur/fachgebundene Hochschulreife : restricted entrance examination/qualification in vocationally oriented university courses

Fachschule : advanced vocational training school

Fachhochschule : college of technology (HE)

Fachlehrer : specialist subject teacher

Fachleiter : head of specialist department

Fachtheorie : theory

Fachpraxis : practice

Gesamtschule : comprehensive school

Gymnasium : grammar school

Grundgesetz : the Basic Law or Constitution

Graduiertenbezeichnung : qualification in one of the 47 specialisms of the Fachhochschulen

Hauptschule : roughly equivalent to secondary modern school

Handwerkskammer : Chamber of Crafts

Industriekaufmann : general clerk

Kultusminister/Kultusministerium : general name given to the Land education ministry

KMK (Kultusministerkonferenz) : Standing Conference of the Länder for Ministers of Education and Cultural Affairs

Länder/Land : states/state

Lehrplankommission : curriculum committee

Maschinenbau : mechanical engineering

Meister : master craftsman

Praktikum : practical application

Rahmenlehrpläne : framework curricula

Realschule : technical grammar school - up to 16 years

Schwerpunkte : trade specialisations

Senator für Schulwesen : name given to the education authority in City States of Berlin and Bremen

Schulwesen : education system

Sonderschulen : special schools for handicapped pupils

Staatlich Geprüfter Techniker : State certificated technician

Wirtschaft und Verwaltung : economics and administration

B. ENGLAND AND WALES

BEC	Business Education Council. Charged with providing courses and certification for business studies at non-degree level in England, Wales and Northern Ireland. It was established in 1974 and its first courses started in September 1978.
B1 BOARD	Business Studies - covers general business careers in large or small firms and would include those whose work is similar to that of the Industriekaufmann and the Bürogehelfin.
CGLI	The City and Guilds of London Institute offers certificates for studies, mainly part-time and mainly at crafts and operative level.
CSE	Certificate of Secondary Education An alternative school leaving examination, at 16, for less academic pupils.
DES	Department of Education and Science
EITB	Engineering Industry Training Board
FE	Further Education. All education after school; nearly always excludes universities; usually more specifically refers to LEA provision of vocational and non-vocational education in colleges and evening institutes. FE is sometimes used to differentiate vocational from non-vocational, the latter being then called adult education; sometimes FE is used to differentiate lower level work from HE or Higher Education.
GCE	General Certificate of Education. An academic stream qualification for school leavers at 16 (Ordinary level), or at Advanced level -(a university entrance examination at 16 plus.)
HE	Higher education. Usually refers to degree and equivalent studies requiring two A levels, ONC or equivalent as entry qualifications; usually includes both university and LEA colleges. (Early in this century, higher education meant post-elementary).

HMI	Her Majesty's Inspector of Schools: HMIs are ultimately answerable to the Secretary of State but are intended to preserve an independence.
HNC	Higher National Certificate (see National Certificates and Diplomas).
HND	Higher National Diploma (see National Certificates and Diplomas).
HOLLAND PROGRAMMES	Term used to refer to the Youth Opportunities Programme (YOP) and the Special Temporary Employment Programme (STEP). Geoffrey Holland is head of the Special Programmes Division of the Manpower Services Commission (MSC).
ITB	Industrial Training Board.
JCP	Job Creation Programme. Introduced by MSC at the end of 1975 to provide temporary jobs in projects for unemployed people.
LONDON CHAMBER OF COMMERCE	An independent examination body in the secretarial and business studies sector.
LEA	Local Education Authority. There are 104 in England and Wales.
MSC	Manpower Services Commission.
NATIONAL CERTIFICATES & DIPLOMAS	The structure of joint committees which awarded National and Higher Certificates and Diplomas (OND, HND, etc.) is being replaced by Technician and Business Education Councils. (See BEC and TEC).
ONC	Ordinary National Certificate.
OND	Ordinary National Diploma. Vocational qualifications approximately equivalent to 'A' level GCE for university entrance but geared more to direct entry to business or industry.
REGIONAL EXAMINING BODIES	Associations which offer various ranges of courses at craft and technician levels, some of their own, some with National Certificates and Diplomas, some with City and Guilds, etc. Six with varied histories: East Midland Educational Union, Union of Educational Institutions, Union of Lancashire and Cheshire Institutes,

	Northern Counties Technical Examinations Council, Welsh Joint Education Committee, and Yorkshire Council for Further Education.
ROYAL SOCIETY OF ARTS	Independent examining body mainly in secretarial and business studies.
TEC	Technician Education Council. Charged with validating courses and certification for technicians working in engineering, construction and science related industries. It will become the single, nationally recognised award-making body in this field. Courses leading to TEC awards started in September 1976. There are four TEC awards - Certificate, Diploma, Higher Certificate and Higher Diploma.
TOPS	Training Opportunities Scheme. Aimed at adults who need new training to take up new employment. Most of the training given under TOPS is related to specific skills or qualifications for which there is a demand.
UVP	Unified Vocational Preparation. Run jointly by the Training Services Division (TSD) of the MSC and DES. Aimed at employed young people. Designed to develop forms of vocational preparation which will benefit young people and gain the support of employers.
WEP	Work Experience Programme. An MSC subsidised scheme under which an employer may offer a chance for a young person to gain work experience on his premises for up to six months.
YES	Youth Employment Subsidy is designed to give help in assisting longer term unemployed young people into regular employment.
YOP	Youth Opportunities Programme provides a range of opportunities for unemployed young people. Directed towards those aged 19 and under who have been unemployed for six weeks or more. An undertaking has been given by the MSC to the Government that every unemployed school leaver will be given a suitable opportunity not later than the following Easter.

SECTION FIVE

REPORT OF THE TECHNICIAN EDUCATION GROUP

TERMS OF REFERENCE 25

MEMBERSHIP OF THE TECHNICIAN EDUCATION GROUP 25

BACKGROUND STRUCTURE 26

- Type of Institution Visited 26
- Course Structure 26
- The Curriculum 29
- Standards 29
- Assessment 30
- Facilities 30
- Technical/Technologist Full-time Routes 31
- Comment 31

TECHNICIAN COURSES AT A FACHSCHULE FÜR TECHNIK IN A LARGE INDUSTRIAL CITY IN NORDRHEIN-WESTFALEN 31

APPENDICES:

- A Master Craftsman Course 34
- B) Sample Timetables for 35
- C) Technician Courses 36
- D) 37
- E Syllabus for Materials Science 38

TERMS OF REFERENCE

The group's objectives were to examine programmes in the Federal Republic which are equivalent to the higher awards of the Technician Education Council in mechanical and production engineering, in particular the Staatlich Geprüfter Techniker (state certificated technician).

On structure, the group's aims were to attempt to seek information on the constitution of bodies; the organisation of responsibilities; numbers of staff, students, variety of courses; roles, e.g. principals, teachers, inspectors; and views of influencing bodies such as Bund, Land, and industry. The group also sought an overview on the objectives, process, and assessment of curriculum.

The investigation initially concerned itself with vocational education and, in particular, with two-year full-time courses at the Fachschulen für Techniker (schools for technicians in their specialist subjects, e.g. electrical and mechanical engineering). The entry requirements for such schools are that, in addition to having pertinent vocational training, the students must have been employed in their particular field for a minimum of two years after the completion of an apprenticeship. The group observed that in Essen the average age was about 23 or 24, with a spread from 21 to 29.

These Fachschulen offer general education in addition to the advanced vocational training implied by the name. They train mid-level personnel to manage enterprises in their particular field and to assume major responsibilities in specific areas.

MEMBERSHIP OF THE TECHNICIAN EDUCATION GROUP

Dr. R.F. Beresford

Herr Regierungsdirektor Bulling

Mr. R.K. Gray

*Mr. A. Hutchins

Mr. J. Leather

Herr Oberstudiendirektor Mayer

Herr Professor E. Oppek

Mr. S.J. Peake

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*Mr. R.E. Stockbridge

Herr Oberstudienrat P. Werntges

Herr H. Wirtz

*Did not participate in all parts of the seminar.

BACKGROUND STRUCTURE

Type of Institution Visited

Perhaps one of the main factors which distinguishes the German upper secondary vocational system from British further education is the single faculty nature of individual colleges. All the colleges visited specialised in a particular aspect of engineering (i.e. electrical or mechanical engineering) except for a privately financed college in Düsseldorf where a wider range of interests included engineering, building and dentistry. There is, however, a range of 57 fields of study, each leading to the qualification of Staatlich Geprüfter Techniker (state certificated technician).

One of the units visited in Stuttgart, the Max Eyth Schule, was typical of a mechanical engineering based college. It included the following departments:

Berufsschule	- part-time vocational school
Berufsfachschule	- full-time vocational school
Berufsaufbauschule	- more advanced specialist vocational school
Fachschule Maschinenbau (Techniker Schule)	- mechanical/construction engineering at higher technician level
Technisches Gymnasium	- technical grammar school

Within the total provision each department appeared to have its own organisation and accommodation, but specialist staff were used whenever they were required in much the same way as staff would move between departments in the British FE system.

Course Structure

The mechanical/production engineering technician course in the Fachschule has been developed since 1970, to ensure a supply of suitably trained and educated technician engineers to meet the needs of a range of middle-management and technician posts in the mechanical engineering industry.

The role of the technician in German industry comes between that of the Meister (master craftsman) (1) and the Ing. Grad. (graduate engineer). The identified occupations shown below are those associated with the technician qualification, the Staatlich Geprüfter Techniker (state certificated technician):

Construction and development
Production planning and work preparation (planning, costing, estimating etc.)

Footnote (1): A note on the Meister course appears in Appendix 1.

Production activities
Control and works supervision
Material testing
Purchasing, sales, customer service
Repairs, acceptance and guarantee, technical advice
Works building department and energy provision
Training of technical specialists
Detail draughtsmen

The routes to the qualification are as follows: completion of a recognised apprenticeship with the accompanying period of education at a Berufsschule, (the dual system) and the final craft certificate (either the Gesellenbrief or Facharbeiterbrief) plus a minimum period of two years' practical experience as a craftsman. This is sufficient for entry into a two year full-time course in the Fachschule für Technik or into a four year part-time course.

Alternative entry is via possession of Realschulabschluß after the tenth school year leading to entry to the Berufskolleg for two years' full-time study, or three years part-time, with approved industrial training and then entry to the second year of the technician course in the Fachschule. The Berufskolleg, peculiar to Baden-Württemberg, is an alternative form of the Fachoberschule found in other Länder.

The course is normally of four semesters, full-time, each of 20 weeks duration (two years in all). In the first year there are approximately 38 periods of 45 minutes each week, (for syllabus comparison see accompanying timetables at Appendices 2, 3 and 4), and the college day is, on average, seven hours.

In the second year, in which the student specialises in his/her particular option, there are approximately 30 periods a week stipulated; these can be increased to 38 for those students who seek entry to the Fachhochschule through its qualifying examination, in order to advance to the qualification of Graduierung (Ing. Grad.) Additional studies consist of German, English and mathematics.

Of the alternative methods of attendance, the first seems to be the most popular, although the method has no parallel in the United Kingdom system. The student leaves his employment upon entry, in many cases with no guarantee that a job will be available upon completion of the course, and receives a grant equivalent to 60 per cent of his previous highest salary, fees and textbooks met by the state. The percentage grant can be adjusted in cases of hardship.

As the students taking this route are 22-27 years old, they have a better understanding of the relevance between theory and practice, although some complained of too much of the former. The combination of the established practical base plus the theory and the maturity of the students, make the end product acceptable to industry. Consequently the successful student has little difficulty, in normal times, in obtaining a post. It was pointed out that during periods

of economic recession, students were unwilling to give up a job to take the course with the possibility of unemployment upon completion. However in conditions of economic prosperity and high employment there is an enhanced demand for places.

It is possible for the course to be completed over four years, part-time which involves attendance from about 12 periods per week (one evening of five periods plus Saturday morning and early afternoon, for seven periods.) A common arrangement, and one which to some extent avoids the hazards of the full-time course, is transference to the latter after completion of the first stage by part-time attendance; whilst the part-time route is recognised to involve a considerable amount of work by the student, entries of up to 100 students in one course are not uncommon.

Of the students interviewed, all without exception, were highly motivated, enjoyed excellent relations with teaching staff and were unanimous that the route they had chosen would lead to increased status, a higher standard of living, a better salary and possibilities of promotion.

The Fachschule at the Max Eyth Schule, which was the centre of our interest, offered a specialism in mechanical construction (Maschinenbau) with options in development (drawing and construction) and production. The first two semesters in each course are identical, the third and fourth are distinguishable by virtue of some variation in hours devoted to different subjects (see appendices). Student numbers are in the low twenties in the first two semesters but there is approximately 20-30 per cent drop-out by the end of the second semester. It was emphasised that this wastage is not necessarily due to academic under-achievement, but in part the result of domestic, economic and career prospect factors which differ regionally. The third and fourth semester classes are usually consistent at 12-18 students with a high pass rate, e.g. 95 per cent.

In addition to the possibility of entry to the Fachhochschule by virtue of the additional studies outlined above, another possibility existed in at least one state. In Baden-Württemberg two pilot courses have been started as one year programmes end on to the two year course at Fachschule. These extend the range and depth of studies in areas of work closely related to industrial problems.

Whilst there appeared to be some enthusiasm for these courses in the single Fachschule involved, concern was expressed about the extent to which such a course would overlap with the work of the Fachhochschule. A time allocation chart for this one year course is included in Appendix D to illustrate the nature of the work covered. This model is experimental and is as yet unevaluated.

The Curriculum

The curriculum is developed in the individual Land from the broad framework provided by the KMK. In Baden-Württemberg it is done by the Department of Curriculum Development in Vocational Education (Abteilung für Lehrplanentwicklung im Beruflichen Schulwesen) within the Land Centre for Education and Instruction (Landesstelle für Erziehung und Unterricht). The Working Party is called the Curriculum Committee (Lehrplankommission). In Baden-Württemberg it consists of variously five to eight members who are senior in various schools in the state. As with the modern trends in British technical education, the curriculum is tabulated with respect to objectives.

Samples of typical time allocation charts for three courses are included in Appendices B, C & D. These show time allocations throughout the course duration for:

a) The two year (four semester) technician course mechanical engineering with options in the final stages for production or design engineering (Appendix C) leading to the Award of State Certified Technician.

b) The one year (two semester) supplementary technician course for a number of mechanical engineering specialists designed to follow-on the two year course (See Appendix D).

c) The four year (eight semester) part-time course leading to the same award as course a (Appendix B)

Also included as Appendix E is a summarised syllabus content for the subject of materials science over four semesters.

Standards

Perhaps the best way to relate standards on British technician courses to those achieved at the end of the four semester German course is to consider the background of the students concerned. Given the same opportunities what levels would similar groups of British students achieve? As we have seen the intake is from the qualified craftsman group and, in view of the sacrifices to be made, from a motivated and able section of that group.

In British terms this would include not only the best of our craft students but also encompass many of the students in practically based vocational streams in our technican certificate and diploma programmes. Probably the grouping would be similar to the more motivated elements in the final stages of the old City & Guilds technician courses. The characteristics of the course are then similar to those which might be expected if this group of students, having acquired several years of industrial experience, were then enrolled into a two year full-time diploma course.

Clearly mathematics, communications and basic science standards would not be highly developed and would have to be carefully directed towards the needs of the course. Technological studies, however, could capitalise on the undoubted practical experience of the students so as to enable these studies to be carried out at industrially realistic levels.

While it is difficult to fix levels accurately, evidence seemed to indicate that basic mathematics and science reached levels comparable with I and part of III of TEC courses while the technology often moved into level IV whenever the limited mathematics attainments were not a restricting factor.

Those few students electing to take the additional studies to prepare for entry to Fachhochschule will develop their mathematical abilities in the third and fourth semesters to standards more in line with TEC level IV units.

Assessment

To ensure uniformity of standards within some Länder, single test examinations are set in each subject. Each college submits items for inclusion in the state set examination. From these items a specialist nominated by the Land selects questions to form the final paper which then forms the standard for the Land. We are unable to determine any machinery for ensuring uniformity of standards between the 11 Länder forming the Federal Republic but were assured that the award had national recognition. In fact such machinery is being developed at the KMK level. In other Länder colleges a variety of internal assessment procedures is being used.

This latter system is not unlike that now used in many colleges in England, Wales and Northern Ireland where colleges continually assess within national guidelines developed and moderated by the Technician Education Council (TEC). While all colleges are free to develop their own units of study and carry out their own assessments, many elect to use standard units developed by national working parties consisting of representatives of industry and education. All assessments and curricula are subject to validation, approval and moderation by the TEC.

Facilities

The group found the emphasis on and facilities for practical laboratory work particularly impressive. In the colleges visited the whole ethos of the school was directed towards technical teaching provision. Each subject area appeared to have its own specialist classroom, laboratory and - where appropriate - workshop provision with specialist staff workrooms located close to related teaching areas. Standards of laboratory equipment and lecture presentation materials were high, enabling an ambitious range of practical work to be carried out either by individuals or by very small groups. Dining, common room and social facilities seemed almost non-existent

and we were led to wonder if this were not an unreasonable price to pay for such excellent teaching provision. However, a new building gives an important emphasis to social amenities.

Technical/Technologist Full-time Routes

Even within Britain great difficulty has been found in obtaining some agreement on the meaning of the term technician. Technicians now being trained in the two year Fachschule course represent only part of the total range of ability we, at present, refer to as technicians in Britain. The remainder completing such programmes as the TEC Higher Certificate and Higher Diploma and Higher National Diploma courses would probably overlap with German engineers training through the Fachhochschule. These young people would usually have come through one of the full-time further education routes after completing the tenth grade in a Realschule or Technisches Gymnasium. A further two years of full-time study covering the eleventh and twelfth grades could lead to the award of the Fachhochschulreife and entry to the graduate diploma course. In time and in quality this route appears to resemble an Ordinary National Diploma course (following four or more 'O' level school leaving qualifications) leading into a degree or Higher National Diploma course.

Comment

One aspect of the technician course which we found difficult to accept was the break in educational studies which took place between the end of the Berufsschule course and the start of the technician course. While recognising the importance of additional industrial experience, we felt that some programme of progressive part-time studies which would enable young people to continue to develop through continuing education in part-time courses is desirable. In conversation with students we found that this view was often shared by them. Some commented on the way in which progress through the full-time education route was possible without the work experience requirement. It is our experience that this type of interruption in studies tends to restrict the students' development in the basic core subjects of mathematics and science.

TECHNICIAN COURSES AT A FACHSCHULE FÜR TECHNIK IN A LARGE INDUSTRIAL CITY IN NORDRHEIN-WESTFALEN

This particular institution offers courses leading to the Staatlich Geprüfter Techniker qualification in two specialist areas. (i) heating, ventilating and air conditioning; (ii) motor vehicle. Both run as either two year full-time courses (for semesters each of 20 weeks duration) or on a part-time basis including attendance for a five hour evening period plus Saturday morning and early afternoon. The provision differs slightly in the two cases: for (i) the

whole course could be done part-time over four years, but for (ii) the last part has to be done full-time for one year.

The college literature makes reference to the fact that normal requirements for entry were those of Hauptschulabschluß or its equivalent from Berufsschule, from relevant Berufsausbildung and at least two years relevant industrial experience following the former (one year for evening students). Current practice is to accept all students having the necessary entry qualifications.

An inspection of the curriculum shows that, in accordance with the precepts for the Federal Government, the first year (full-time) courses were identical in content; however, the students are taught as quite separate groups. As a consequence of the relatively easy access to the course (this in spite of the financial and job-security penalties) the drop-out rate after the first year has recently been as high as 20-30 per cent. More specific points regarding students' performance are developed below.

After a very interesting period spent 'sitting in' on a theory class of the motor vehicle (third semester) group, the group was invited to put questions to the students, a number of whom spoke good English. We were told that the jobs they sought were typically inspectors, designers, insurance assessors and works supervisors. As to their motivation, it seems concerned with status and money - job satisfaction was not mentioned except after prompting. When asked for their views on the curriculum content and its appropriateness to their personal aims, comments varied from 'too much laboratory work' (in fact about 20 per cent of the course) to 'too theoretical and not enough practice'; however, the teacher's comment, that the theory was necessary to give a broad basis for future development, was accepted without argument. Although, in theory, it is possible for a qualified technician, by taking additional subjects, to obtain entry to a Fachhochschule and from there obtain his Ing. Grad., the numbers so doing are, we were informed, very low. On student assessment, this takes the form of regular tests (perhaps one a month) together with assignments (of a closely structured nature) and laboratory reports (using both proformas as well as full reports). There was no specific mention of end-tests; and project work as it is normally understood in the United Kingdom does not feature.

Examples were shown of recent test papers which indicated a high degree of structuring and detailing of marking schemes. As to the students' expected performance, marks are banded and the students given grades with grade 4 (50 per cent - 66 per cent) representing the lowest pass grade. During the first two semesters, students are examined in nine subjects; they are required to pass in at least eight and reach a required average over the nine, if they fail in two they may move to the third semester but must be re-examined in one subject with a maximum grading awardable of "4". If there are more than two failures the student must repeat the whole year.

Later, the group had an opportunity to put questions to some of the teaching staff in order to establish the role of the teacher in the process of technician education. We were reminded that the Land organisation for curriculum development is responsible for 'filling out' the guidelines handed down from KMK; groups of teachers and engineers then design programmes of work to implement the Land's scheme. The engineers in the groups are usually part-time teachers who are encouraged by their industry to participate. A series of questions were put regarding the influence of various persons on the curriculum implementation process. (i) Fachleiter (i.e. specialist subject leader) - none, except by request of teacher; (ii) college principal - none, except in an emergency; (iii) industry generally - no direct influence; (iv) trades unions - since August 1978 some influence, but not yet felt.

It appears that there is a direct line of contact between the teacher and the subject specialist working at a regional level (i.e. below that of the Land itself). The notion of a departmental structure as in the United Kingdom model simply does not arise. Again, it was surprising to learn that intercommunication between teaching staff in the different Länder was only done informally, there being no agreed structure for this.

On the matter of the school internal organisation, it appears that the Fachleiters are responsible for the preparation of timetables within their own specialism and for other general administrative duties. Together with the principal and his deputy they constitute the 'Direktorenkonferenz' which is concerned with the overall organisation of the school and for determining its policy. As a consequence, the Fachleiter's timetable is reduced from 24 to 18 'Stunden' (45 minute periods).

Questioned as to the desire of the student body to be represented at this level, our German colleagues remarked that such representation has been possible since August 1978, but that as yet very little interest has been shown. Students do not have corporate activities (such as, for example, a students' union), but do have close associations with the staff. In the event of particular problems they can approach the principal or even the minister (we were shown an example of a class of 31, obviously too large to be taught properly as an entity, who were told at the highest level that a 'split' was only possible for a class size of 32).

As regards the professional aspects of the teacher's work, there are three separate unions, connected by "Federal Association" to represent primary, secondary and further/higher education teachers. Starting after the First State Examination as a "Referendar" (probationer trainee under supervision of qualified teacher), a teacher becomes qualified and entitled to full civil servant status in one and a half to two years passing the Second State Examination which consists of two inspections, a viva voce a short written dissertation and a grading based on continuous assessment. Retirement occurs at any time after the age of 62 and no later than at 65, with a maximum pension of 75 per cent of previous highest salary payable after 40 years' work.

APPENDIX A

Master Craftsman Course (Fachschule, Meisterschule)

A report of this type would not be complete without reference to this course. After completion of apprenticeship and a further five years' experience a young craftsman can elect to enrol on a one year full-time course. He would be required to resign his appointment with his present employer and rely on a grant of about 58 per cent of his earnings for the duration of the course. The course is planned partly to enhance already considerable craft skills but partly to prepare for the trainees setting up in a small business as an employer. Aspects of operating small businesses forms an important part of the studies.

The successful completion of this course leads to the status of Meister in his own craft. Without such a qualification he could not start up in business in his own right, neither would he be able to employ and train apprentices.

Standards achieved are comparable with the completion of a Part III craft studies course coupled with two closely related Level I EITB training modules.

APPENDIX B

Timetable for Evening School (Subject: Mechanical Engineering - four years)

SUBJECT	I	II	III	IV	V	VI	VII	VIII	TOTAL STUDENT PERIODS
German	30	30	20	20					100
Oral work							20	20	40
Industrial and Civil Law	20	20	20						60
English	50	50	30	30					160
Mathematics	60	60	60	40					220
Physics	20	20	20	20					120
Laboratory	20	10	10						
Technical mechanics	20	20	30	30					100
Chemistry	20	20							60
Laboratory	10	10							
Materials			20	20	30	30	20		160
Laboratory			10	10	10	10			
Electrical engineering	20	20	20	20					120
Laboratory	10	10	10	10					
Technical drawing			20	20					40
Mechanics of machines					40	40	30	40	150
Strength of materials					40	40			90
Laboratory					10				
People and management						20	20	20	60
Industrial management	20	20			40	40	40	40	240
Laboratory		10				10	10	10	
Production engineering			20	20	40	60	50	50	320
Laboratory			10	10	20	10	10	20	
Construction					40	50	60	50	200
Instrumentation and control					30	20	20	40	160
Laboratory					10	10	20	10	
TOTAL	300	300	300	300	300	300	300	300	2400

A student period is 45 minutes.

APPENDIX C

TECHNICAN EDUCATION (Four Semesters)
Here: Mechanical Engineering

Semesters (Half an academic year)

As at July 1974

SUBJECT	I	II	III	IV	TOTAL STUDENT PERIODS**	
German	3	3	(2)[1]	(2)[1]	120 (200)[1]	( ) 1 Additional subjects and study periods for obtaining the Fachhochschulreife (i.e. entry qualifications for the trade high school)
Industrial and Civil Law	3	3	-	-	120	
English	4	4	(2)	(2)	160 (240)	
Mathematics	7	7	(4)	(3)	280 (420)	
Physics	3	3	-	-	120	
Technical mechanics	3	3	-	-	120	
Chemistry	2	2	-	-	80	
*Materials science	1	1	3	3	160	
Electrotechnology	3	3	-	-	120	
Technical drawing	2	2	-	-	80	
Mechanics of machines	-	-	4	4	160	
Strength of materials	2	2	-	-	80	
People in management	-	-	2	2	80	
Industrial management	2	2	5	5	280	+ Special topic: Production
Production engineering	2	2	7+/4++	7+/4++	360+/240++	++ Special topic: Development
Construction	-	-	5+/8++	5+/8++	200+/320++	
Instrumentation and control	-	-	4	4	160	
	37	37	30 (38)	30 (37)	2680 (2980)	

* The topics covered in this subject are listed in Appendix E.

** A student period is 45 minutes.

APPENDIX D

Timetable for the two Semester Technician Supplementary Course

Subject: Mechanical engineering
Special Topic: Development construction (DC)
Special Topic: Production engineering (PE)
Special Topic: Data processing (DP)

Lectures (L)
Workshop practice (WP)
Projects (P)

	1st half year			2nd half year						Totals		
				Special Topic DC		Special Topic PE		Special Topic DP				
SUBJECTS	L	WP	P	L	WP	L	WP	L	WP	DC	PE	DP
1. People in management	30			30		30		30		60	60	60
2. English	40			40		40		40		80	80	80
3. Mathematics	50			40		40		40		90	90	90
4. Materials	40	10		-		-		-		50	50	50
5. Electrical engineering	30			-		-		-		30	30	30
6. Production	50			210		50		-		260	100	50
7. Instrumentation and control	120	50		120	40	120	40	120	40	330	330	330
8. Special procedures production and statistics	20			-		30		-		20	50	20
9. Materials and special machine	50			60		-		-		110	50	50
10. Industrial management	70	20		50		140		100		140	230	190
11. Systems analysis	60			60		60		60		120	120	120
12. Data processing	-			20		80	40	200	40	20	120	240
13. Safety	60			60		60		60		120	120	120
14. Planning and control	30			60		60		60		90	90	90
15. Projects	-		60	-		-		-		60	60	60
16. Visits	10			10		10		10		20	20	20
	660	80	60	760	40	720	80	720	80			
	800			800		800		800		1600	1600	1600

A student period is 45 minutes.

APPENDIX E

Syllabus Materials Science Topics and Subsections

Basic Metallurgy (16 periods)

Structure of metals
Binary systems

Iron-Carbon Alloys (19 periods)

FE - FE_3C diagram
Heat treatment of steels
Hardening and tempering
FE - C - castings

Non-ferrous Metals (8 periods)

Aluminium and aluminium alloys
Copper and copper alloys

Standardisation of Metals (8 periods)

Systematic nomenclature of iron and steel according to DIN 17006
Standardisation of non-ferrous metals to DIN 1700
Numbering of material to DIN 17007

Organic materials (12.5 periods)

Plastics
Lubricants

Testing of materials (18 periods)

Tensile strength
Notched bar test
Hardness
Fatigue test
Non-destructive testing

TOTAL	82
Practical work	12
Class testing	66

160 periods

SECTION SIX

REPORT OF THE BUSINESS EDUCATION GROUP

TERMS OF REFERENCE 40

MEMBERSHIP OF THE BUSINESS EDUCATION GROUP 40

BACKGROUND STRUCTURE 41

- Job Classifications in both Countries 41
- The Route through Vocational Education and Training in both Countries 41

THE CURRICULUM 44

- Curriculum Development for Office Workers in the Federal Republic of Germany 44
- Comparative Developments in England and Wales: Vocational Education in Colleges 46
- In-company and other training for office work 50

INSPECTION AND MODERATION OF STANDARDS 51

- Federal Republic of Germany 51
- England and Wales 52

EXAMINING AND ASSESSMENT IN BOTH COUNTRIES 52

TERMS OF REFERENCE

Where practicable this report has been written in terms of the group's briefing, which was:

a. That the definition of the curriculum is the learning that takes place as a direct consequence of the interaction between students and teachers, and

b. That the two comparable groups of students were:

In England and Wales: students studying for the General Diplomas and National Certificates and Diplomas of the Business Education Council, (Bl Board 1), and

In the Federal Republic, for the Berufsgrundbildungsjahr, Rahmenlehrpläne and Ausbildungsordung for Industriekaufmann 2.

However, on the basis of the information available to the group and, in order to make what the group believes to be the most effective comparison a broad interpretation of what is or might be seen as relevant to the brief has been adopted.

MEMBERSHIP OF THE BUSINESS EDUCATION GROUP

Mr. P. Abbott

Frau. G. Brinkmann, Dipl. -Kaufm.

Mrs. J. Elliott

Herr Ministerialrat Dr. Lammert

Mr. M. Norman

Miss H.E. Orchard

Herr Professor H.K. Ott

Mr. A. Owen

Herr Oberstudiendirektor Plasberg

Mr. G. Thomas

Herr Dr. Uthmann

Footnotes:

1. Bl Board - Business Studies - covers general business careers in large or small firms and would include those whose work is similar to that of the Industriekaufmann and the Bürogehilfin.

2. Industriekaufmann - General Clerk.

BACKGROUND STRUCTURES

Job Classifications in both Countries

In the Federal Republic of Germany (FRG), there is a federally agreed classification of recognised training profiles which is amended from time to time. As of Autumn 1978 it included 460 categories. Each job has a specification with associated vocational education and training programme. It is claimed some 20,000 types of job are subsumed within the 455. The categories and the vocational education and training programmes are identified and agreed by a process of negotiation between the Federal Government, the Länder, employers and trades unions and incorporated into the law. Decisions must be unanimous. Any additions to or deletions from the list of recognised job categories requires the agreement of employers and trades unions as well as the Länder and Federal Governments.

Generally the agreed training and vocational education programmes must be successfully completed before a person is qualified to be employed in the defined job category and the full standard wage received. These wages in the business/office work field may be up to 100 per cent more than the allowance received during the training/apprenticeship period.

Since the Berufsbildungsgesetz of 1969 (Vocational Training Act), the 455 job categories have been grouped together for certain purposes into 13 main occupational groups. One such, Wirtschaft und Verwaltung (business and management) covers the whole area of office work and work for the distributive trades. Twenty-four officially recognised training profiles are included in this group, or up to 40 if computing jobs are included.

In England and Wales, the only official Standard Industrial Classification (developed by the Department of Employment) is used almost exclusively for research and statistical purposes. It does not relate to the title which a job may be given in a particular company. It may, or may not, coincide with one or more agreed forms of education and/or training or to a formal apprenticeship pre-requisite. In the area of office work there is little agreement about titles for jobs, or about levels or types of qualifications required. The absence of recognised job classifications for office work with associated job titles complicates any attempt to compare the UK system with that of the Federal Republic of Germany.

The Route through Vocational Education and Training in both Countries

In the FRG office workers will have completed 9, 10 or 13 years of full-time education, leaving school at 15, 16 or 19 years. They will enter into an apprenticeship contract with an employer for one of the sub-categories of work within the area of Wirtschaft und Verwaltung (business and management). This will normally last three years and requires completion of on-the-job training following nationally agreed programmes and a specified course on compulsory release at a Berufsschule (part-time vocational school).

Recent developments have included the Federal Government inspired concept and planning of a full-time Berufsgrundbildungsjahr (foundation year) common to all those in the one of the 13 categories (Wirtschaft und Verwaltung for office workers) followed by a two year period of combined on-the-job and day or block release attendance for the specific job training and associated vocational education. The objective of the Berufsgrundbildungsjahr is to broaden the educational base and aid transfer between occupational sub-groups. The apprenticeship is still to be completed in the traditional three year period. The school based Berufsgrundbildungsjahr is favoured by the 11 Länder and Federal Governments and the trades unions but has not found much favour with employers.

The group found no examples of the Berufsgrundbildungsjahr operating in Berlin or Nordrhein-Westfalen for office or shop workers, though Berlin expressed the hope that it would introduce this one year full-time course from 1979. Students taking apprenticeship in office occupations after completing their Abitur (19+ grammar school examination providing entrance to university), take the same course but may complete it in two years instead of three. Students who have completed the Realschule (technical grammar school course) or a course of equivalent level may complete their apprenticeship course in two and a half years.

The impression gained by the group was that vocational courses for business, especially in large towns have, in the past, been provided in small institutions, each providing for a special area of business vocational education needs.

A contrast can be drawn in that in the UK the development pattern is to bring together different disciplines and students in training for different careers into one institution. It appeared to the group that, in the FRG, the movement is to form institutions differentiated sharply along student career lines. One of the concomitants of the West German system would seem to be that students are required to make a very early selection of career - often at 15 - and that changing a career choice results in a considerable lengthening of the training period.

At the end of the apprenticeship period the successful student (90 per cent of those who complete) will have qualified worker status within the specified category, rather than be, as in the British context, the holder of a particular examination or qualification. However, successful completion of the training programmes can be used, in agreed circumstances, as an entry method to higher education. UK students or workers may also use vocational studies as an entry route to higher education, but among UK office workers formal apprenticeships do not exist. Training is usually company designed and provides no nationally recognised standard of performance. In some areas of British commercial life, such as banking, programmes have been agreed which combine training with vocational education. Failure to complete the prescribed vocational education course and qualification will reduce promotion prospects. In the early years following completion, however, the effect on salary may be minimal.

In some sectors of British industry the industrial training boards have given attention to commercial as well as technical training for relevant employees in their industry. However, whereas technical training programmes are usually prescribed if certain jobs are to be obtained, completion of the equivalent commercial training programme is frequently at the discretion of the employer who may or may not permit day or block release for associated vocational courses.

Where day or block release for those between 16 and 18 is permitted, not all employers specify the precise nature of the course(s) to be followed. Continuance of general education or any one of a range of courses with a vocational bias may be accepted as, for example, is the case with the civil service and the Greater London Council (GLC).

In the Federal Republic it is possible to identify for office occupations one route with minor variations to each of a specified number of clearly defined job categories. The arrangement is subject to a legal contract between employer and trainee. The student who fails to complete the apprenticeship and claims that either the employer or school failed to provide training/education of the specified standard within the terms of the contract as stated, may have recourse to the courts for redress from an employer. A few such cases occur each year, most often with the backing of the trades unions concerned.

Still other disputes are settled at Chambers of Commerce level. In the opinion of the group this sanction, combined with the legal requirement of the student who is not in full-time education to continuing part-time vocational training and education to age 19, provides a considerable incentive to employers to ensure that the education and training provided is that which has been formally agreed. Teachers' groups and trades unions look to the inclusion in all programmes of appropriate provision for the development of general education and social skills.

Provision is more varied in the UK. Appropriate qualification may be difficult to identify and may be obtained either before or after entry to employment. Once gained, it may well serve as a qualification for a much broader range of occupations than any one of the German occupational sub-groups.

In the UK, according to the employing organisation's views on the needs of the job, educational requirements for a clerk could include:

a. Formal completion of secondary schooling without certification.
b. Possession of a minimum specified number of GCE 'O' levels or CSE passes.
c. GCE 'A' levels in business-related or non-business related subjects.
d. An Ordinary National Certificate or Diploma in Business Studies or in Public Administration.

e. Single subject or group certificates of the Regional Examination Boards, the Royal Society of Arts or the London Chamber of Commerce, or
f. In the future, the awards of the Business Education Council at either General or National level.

In certain types of employment with specialised requirements for clerks and junior administrators, more specific forms of education-cum-training are recognised by employers. At present these needs are met either by in-coming training or by such training accompanied by acquiring membership by examination of one of the very many professional or semi-professional bodies whose interests lie within the general field of business. Such occupations as freight forwarding have traditionally been provided for in this way.

Because of the very wide variety of courses and qualifications and the absence of compulsory day release, post-employment study may take place by day or block release but may also be by evening course. For the somewhat older student it may be by correspondence course. With much less clearly defined relationships in the UK between success on the course and employment prospects, failure rates (as a percentage of those who start courses and of those actually attempting final examinations), are, probably not surprisingly, much higher than those quoted to the group as applying in the FRG.

THE CURRICULUM

Curriculum Development for Office Workers in the Federal Republic of Germany

There are joint meetings between those responsible on behalf of the Länder for vocational education and those responsible on behalf of the Bund for training programmes in order to co-ordinate requirements. However, we were not clear about how such co-ordination is actually achieved. There was some evidence from discussions with other officers that the degree of co-ordination is not great. Each individual Land has responsibility for the further development of the Rahmenlehrplan of the KMK into a Rahmenlehrplan for its own schools. In Berlin the group was told that it took the staff of the office for the Senator für Schulwesen (education authority) one year, working in co-operation with a group of teachers selected by invitation from local commercial schools, to develop the Rahmenlehrplan (framework curriculum) for the schools from the Rahmenlehrplan of the KMK. Staff involved draw on their common experience and take into account recent and relevant research findings. If the teachers identify in the Rahmenlehrplan things which are too difficult or too easy for the students for whom it is intended, changes are possible but they take time. The formal procedure to be followed by a teacher identifying a need to change something would be to inform his principal who would inform the inspector. If the inspector then agrees, he gets in touch with the Kultusministerium. The final stage would be for the suggestions to go to the Lehrplankommission (curriculum

committee). The complicated nature of the procedures and the need to co-ordinate school and training elements in the plan, reduce the likelihood of rapid change.

In Berlin and Nordrhein-Westfalen the group was told that the depth of additional development from KMK Rahmenplan to State Rahmenlehrplan varied considerably from one Land to another. In Berlin the development is obviously considerable; the implication is that in some Länder it is mimimal. Lower Saxony was quoted as one such example.

In Berlin, development of each broad subject area within each Rahmenplan is undertaken by the staff of the office of the Senator for Schulwesen assisted by three teachers. About 150 teachers in any one week take part in this type of activity.

In Berlin teachers are seconded for a period of about a year for the equivalent of one third of their time. It appears that teachers selected for this work are usually experienced and senior within their own institutions. Principals of the commercial schools appear to be influential in deciding who is selected. Developments in the Länder may alter the sequence of objectives as well as amplify them, but all items in the Rahmenplan must be covered.

Once the draft framework is completed it is the job of the same office to test its acceptability to other groups such as trades unions and employers. Formal approval comes from the Supervisory Board of the Department of the Berlin Senate, which is composed of civil servants. However, the Senator für Schulwesen, a political appointment, may object and refuse to ratify. The group was informed that in Lower Saxony the Senator responsible had rejected the draft Rahmenlehrplan.

The group identified a formal commitment of teaching staff time to the development of the Rahmenlehrplan in Berlin. It was understood that in Berlin there are funds available for staff development programmes to enable those teaching in the schools, and not involved in the course and curriculum development work, to develop their skills to meet the particular needs of the course. It is possible to assume that revised curricula are not necessarily expected to be accompanied by revised approaches to subject matter or to changed teaching methods. In Berlin those involved in curriculum development are able to help their colleagues when they go back into the schools. However, in the very limited opportunity available to talk to teachers in schools the group was not able to discover any information on whether or how this might occur. The group was informed that special funds for staff development were available in some other Länder.

The introduction of the new Rahmenlehrplan in Berlin will, however, coincide with the creation of some 45 new teaching posts in the vocational schools overall. In Berlin also there was some indication that the office of the Senator für Schulwesen accepted responsibility for producing teaching aids, recommending texts and for monitoring. Elsewhere the number of institutions

concerned with training and development for teaching staff is increasing, but these are not necessarily concerned specifically with producing teaching materials for the new Rahmenlehrplan courses. This aspect of their work is likely to grow.

Comparative Developments in England and Wales: Vocational Education in Colleges

The position in England and Wales differs from that in the FRG in that there is no one recognised vocational education route to a career in office work. At the level equivalent to that of the trained and experienced clerk, employees might possess intermediate level professional qualifications or may have achieved their position by long experience in the work. Professional bodies are often also examining bodies, with independent - frequently chartered - status. In recent years the number of such bodies has grown. While the status conferred by membership of the more august bodies is usually fully understood by employers and employees, the same cannot always be said of membership of some of the newer bodies or those whose link with employers is less clear. For example, export clerks may or may not be members of the Institute of Export or have taken the Institute's examinations. Other bodies traditionally associated with examinations for the office worker include the Royal Society of Arts and the London Chamber of Commerce Institute. Their single subject examinations, and more recently some group subject examinations, are often taken by junior or new entrants to office work and are accepted as relevant qualifications by many employers.

In the period prior to 1974, the Department of Education and Science (DES) involvement in vocational education for office work related to the formal role of HMIs and the Department's responsibility for the former Joint Committee for National Awards in Business Studies and Public Administration and the National Committee for Certificates in Office Studies. The Joint Committee was joint between the DES and representatives of professional bodies and educational interests. It was responsible for the Ordinary and Higher National Certificates and Diplomas in Business Studies and the Ordinary National Certificate in Public Administration. Over a period of some 16 years this Committee was able to secure increasing recognition of these awards as appropriate vocational qualifications for a range of office employees at a status level equivalent to those of the Industriekaufmann identified in the West German survey.

These awards also provided a route for some employees to full professional qualifications. In the 1960s and 1970s some professional bodies gave up examining in the UK at intermediate level (for example, the Institute of Bankers) and recognised the public sector ONC Business Studies as the route to intermediate professional status.

Curriculum development was usually undertaken for the Joint Committee by HMIs who involved some teaching staff. Professional bodies were frequently consulted on the acceptability of a syllabus or group of syllabuses. Their criticism could greatly reduce the likelihood of the adoption of a particular subject syllabus by the Joint Committee. There was little if any direct formal contact or consultation with employers at the national level, though at local level many colleges developed such links which might influence the subjects which colleges included in their course as a selection of those available and in some cases locally devised syllabuses were evolved.

Success in the ONC/D or HNC/D Business Studies awards depended on achieving an acceptable level in course work set and marked by the college and examinations which were usually college-based. The standard of these was monitored by assessors (mostly teachers) appointed by the Joint Committee. Technically the Joint Committee could also review the course work of students but this right was very rarely exercised.

The National Committee for Certificates in Office Studies awards were run for the Committee by six regional examining bodies and the Royal Society of Arts (RSA). The Committee approved syllabuses but each examining body set its own examinations.

Since 1974, responsibility for the development of a rational system of non-degree business education has been vested in the Business Education Council (BEC), set up by the Secretary of State for Education and Science acting on the recommendation of the Haslegrave Committee. The Secretary of State appoints the Council's chairman and members in a personal capacity. Members include a much higher representation from industry than was the case with the Joint Committee, as well as members from training boards, professional bodies and educational interests. In September 1975 the Committees referred to above acceded to BEC which continues to run the old awards without major changes until its own system is fully operative.

It is therefore BEC which has the nearest equivalent responsibility for the development of vocational education for office workers to that exercised jointly by the relevant departments of the Federal and Länder governments in West Germany. BEC, however, though required to report annually to the Secretary of State, is not a department of either central or local government, but an independent body registered as a charity and as a company limited by guarantee. There is provision for central government funding in the event of a deficit, but the main income source was intended to come, and except for the first 18 months of its existence, has come, from fees paid by students and colleges taking or running courses for which BEC is responsible.

Also in contrast to West German equivalents, BEC was provided with no legal status as the body qualified to certificate employees in, or entering, any particular career in business. Acceptance of BEC awards as appropriate vocational education for office workers is dependent on the extent to which BEC can

persuade employers, trades unions, colleges, professional bodies and students of the greater appropriateness of BEC courses as compared to others which may be available. Meanwhile professional and other examining bodies may continue to run their parallel courses or develop new ones.

Curriculum development within BEC is the responsibility of four Boards, appointed by the Council and responsible to its education committee. Membership is drawn equally from education and from business. Specialist committees have been appointed for the associated curriculum development in secretarial studies and in modern languages. Each of the four Boards looks after the vocational educational needs of those in particular areas of work: B1 - Business Studies covers general business careers in large or small firms and would include those whose work is similar to that of the Industriekaufmann and the Bürogehelfin. B2 - Financial Sector Studies Board is concerned with careers in banking, accounting, building societies, insurance, etc. B3 - is responsible for Distribution Studies and B4 - for Public Administration and Public Sector Studies. The awards developed to-date are mainly for the 16 to 21 age group and are at three levels: BEC General, primarily aimed to provide for low level office work and new, young recruits; BEC National providing courses for those who could aim to reach an intermediate or technician equivalent level; and BEC Higher National which provides a vocational education to a level approximately equivalent to pass degree standard. Both BEC National and BEC Higher National awards are recognised for exemption by many professional bodies for specified levels of membership and examinations.

All BEC courses provide a common core of studies relevant to a range of careers in business, an approach which has some similarity to the West German Berufsgrundbildungsjahr (foundation year). Studies for a specified number of option modules are added to the BEC core. These may be more clearly identified with a special job or career, such as banking, accounting, marketing, secretarial skills subjects, computer studies or display studies for retail distribution.

Detailed curriculum development has been undertaken in small working groups drawn mainly from Board and committee members and from college staff. Invitations to participate are personal, not sponsored by particular colleges or organisations. Business and professional bodies are consulted as much as possible. These groups are serviced by the full-time staff of the Council, all of whom have knowledge of the education system and the requirements of course design. Course specifications have been written in terms of general and learning objectives with emphasis on teaching methods and implementation. The Council's policy requires all courses to develop the student's understanding of the BEC central themes of:

Money: understanding that all business decisions have financial consequences and involve questions of material and human resources.

People: ability to work effectively with others and awareness that business activity has implications for people as employees, as investors and as consumers.

Communication: ability to express oneself clearly and simply, to deal appropriately with information, and to interpret written and spoken English.

A Logical and Numerate Approach to Business Problems: ability to apply numerate and analytical techniques to business problems and awareness of the technological context of such problems.

The ability to relate what is learned in college to the business world is developed by requiring the students to undertake assignments which draw on knowledge, skills and understanding from across the core of the course, and for full-time students, by the inclusion of either work experience or assignments which are work related. The successful achievement of the award depends on the student's performance both during the course and in end-of-year or end-of-course examinations.

In the majority of cases there is as yet no direct link between success in the award and the achievement of a specific job title or status. Some organisations grant merit increases following success on BEC awards. Some, such as bankers, have decided to use it as their one formal vocational qualification for certain levels of employee. The newly formed Association of Technicians in Finance and Accounting has based the educational requirement for membership (which is complemented by a period of training in accountancy employment) on the BEC National Diploma, which will, in this instance, be mainly taken by means of three years of part-time day release or evening study.

New BEC courses were introduced in 1978 and 1979. The numbers of people in college and business who have been involved in this curriculum development work is difficult to ascertain precisely. BEC committees have collectively some 300 members. Working parties have probably doubled the number of those indentifiably involved but, in addition in the majority of cases, those taking part in curriculum working parties have consulted their colleagues in school, office and professional body, thus involving widening circles of teachers which could number some thousands.

Unlike the West German example, there was no formal secondment for involvement in the work at national level. The work of the Business Education Council has taken place alongside the continued existence of bodies responsible for other examinations referred to above. Bodies such as the Royal Society of Arts and the Regional Examining Boards have continued to offer their courses to develop new curricula as required. Teachers and representatives of business and professional interests are

involved in these processes. As with the Business Education Council, invitations to participate are usually on a personal basis.

The direct involvement of the local education authorities in England and Wales is even more difficult to specify. The establishment of BEC was endorsed in advance by the local education authority associations. Formal consultation takes place from time to time between BEC and groups of representatives of the LEAs on matters of mutual interest. The local authority associations have given their approval in principle to the idea of providing resources for staff development to introduce the new BEC courses. The actual amount of resources provided varies from one authority to another and cannot, at this stage, be quantified. Many, but not all, local education authorities employ inspectors or advisers, many of whom have run courses and training sessions to help colleges prepare for the introduction of the new BEC courses.

There have also been individual college initiatives to prepare staff for the new courses and to develop assignment materials. Colleges have been encouraged more than has been the case in the past to involve local employers in course and curriculum planning and development. In many colleges time allowances for staff engaged in preparing for the start of the new courses has been agreed with the employing education authority, but there is no uniform pattern.

Initiatives in providing staff training facilities have also come, partly encouraged by BEC, from the four colleges with special responsibility for teacher training in further education and from the Further Education Staff College at Coombe Lodge. These colleges are developing banks of material which can be made available for the use of teachers in the colleges. BEC itself, more than has been the case with other bodies concerned with business education in the past, has produced sample teaching materials and guidance to teachers on teaching methods.

In-company and other training for office work

Just as there is no one recognised vocational education for specific jobs in offices in the UK, so there is no nationally prescribed training scheme. Individual companies may, and large ones often do, provide formal training for their workers. However, the concept of a formal apprenticeship rarely exists.

Industrial training boards (ITBs), established in 1964, have responsibilities for training all employees in their industry. Office workers are employed in all industries. They seldom constitute the major work force. Except for those expected to reach full professional status, they are not the workers employers recognise as being their principal responsibility to train. Most, but not all, ITBs have produced training recommendations for clerical and administrative workers, but these are not binding on the employer. There may, however, be some financial advantage to employers in providing training.

Another major government body with an interest in training which extends into the clerical/office field is the Training Services Division of the Manpower Services Commission (responsible to the Secretary of State for Employment). Large sums of public money have been made available to the MSC since 1973 to fund a variety of special measures to combat unemployment and to finance training initiatives. Although recognising the advantage to students and employers of adequate and appropriate education and training for office and other workers, the Manpower Services Commission/ Training Services Division does not recognise or promote any one route to qualified status. In addition to encouraging in-firm training initiatives the Manpower Services Commission/ Training Services Division will give financial support to a range of short courses for office workers in colleges or in their own Skill Centres. Some of these are acceptable alternatives to the longer period required to achieve a BEC or alternative business studies award.

INSPECTION AND MODERATION OF STANDARDS

Federal Republic of Germany

Moderation of standards of company-based training is not formalised, but the entry rights to organisations of the Chamber of Commerce would appear to exceed anything that exists in the UK.

The examination system for business education is administered by the Chambers of Commerce. Written papers include objective tests and are agreed by trades unions, teachers and employers. Oral examinations account for 50 per cent of the marks. Chambers can withdraw a company's licence if examination regulations are not followed. There was some criticism by teachers of the written examination because of lack of examination expertise in the Chambers and criticism of teachers because they were not practical enough. Each Chamber of Commerce has a Council which advises on the whole area of its responsibility for vocational training. This Council is composed of six employers, six employees and six teachers, who do not have voting rights. The Chambers also have an Examination Board for each area covered by a training profile. Each such Board consists of an equal number of employers and employees plus at least one teacher.

Länder governments have their own inspectors for vocational schools. In Berlin they have eight full-time inspectors for a total vocational teaching staff of 320 in Berufsschulen - very high by comparison with large LEAs in the UK. Nevertheless, comment was made on the infrequency of visits to schools and of much time being spent in offices, form filling, etc. Throughout the FRG teachers are required to complete an hourly work sheet indicating what part of the course is covered. Poor results by students may result in a teacher being moved from teaching higher to lower levels of work!

England and Wales

Examining bodies in the UK lay down rules under which their courses may be run. If an institution does not wish to keep to these rules, it can offer an alternative course.

The Business Education Council has adopted, for its new awards, a policy of appointing part-time course moderators (who are mostly themselves full-time teachers in further and higher education) who visit colleges three or four times a year and have formal responsibilities in ensuring that the scheme is run in accordance with the rules and the conditions upon which approval was granted, and to agree with the centre the assessment procedures. The Council also plans to devote resources to monitoring the standards achieved on its courses and their continued relevance to the vocational needs of students and employers.

EXAMINING AND ASSESSMENT IN BOTH COUNTRIES

In the FRG visit the group did not identify any kind of formal in-course assessment contributing to the final completion of the course and granting of the vocationally qualified status for office workers. However, as the percentage of students who pass the final examination is very high, it is assumed that students gained a clear picture of the likelihood of their success or failure during the course. Examinations are held towards the end of the training period; not always right at the end. The examining bodies are the Chambers of Commerce for the particular industry in the area. Standards are, therefore, common within each Land but there is no procedure for standardisation between Länder. However, the qualifications of any one Land are accepted throughout the FRG. The examinations cover both the work undertaken in the firm as part of the vocational training and what has been done in the school. Examinations have both written and oral components.

The Chambers of Commerce appoint advisers to oversee the conduct of the work-based training elements and firms are obliged by law to admit these advisers. The BIBB in Berlin devises training schemes for trainers and conducts research into training. Most trainers have received some training but are not teacher trained. Salaries on the whole are lower and job security is less than in schools. However, senior training personnel in large companies may receive comparable or higher salaries than those paid to teachers.

In Berlin the group was informed that about 75 per cent of students complete the Industriekaufmann training. About 50 per cent of those enrolled for Bürogehilfin apprenticeships are successful. However, selection for Bürogehilfin is less stringent and the benefits of passing are less obvious in career terms. In Nordrhein-Westfalen pass rates average about 85 per cent for Industriekaufmann and 75 per cent for Bürogehilfin.

Students may attempt the final examinations on three occasions. If they still fail to pass they may not get the salary increases

associated with the completion of training and do not qualify for training.

In-course assessment is increasingly becoming part of the formal assessment of student performance in the UK. Successful completion of a BEC award depends on formal end-of-year and end-of-course examinations and in-course assessment. At BEC General level examinations are nationally set by BEC. At BEC National level, in-course assessment is by teachers with BEC moderation. Examinations are most often set and marked by college staff but are in all cases moderated on behalf of BEC by the course moderator. BEC hopes to establish and maintain national standards by co-ordination between moderators and post-examination reviews.

Other national and regional examining bodies providing courses for office workers use some in-course assessment in addition to final, external examinations. Professional bodies rely almost exclusively on external examinations set and marked by appointed examiners. ITBs employ training officers, many having regional responsibilities, who can advise employers on standards achieved in their in-company training schemes. There is, however, no formal external assessment of the schemes or the employees' performance on the schemes.

Oral examining was found to be a standard part of the FRG schemes, but it is less common in England and Wales. Some schemes, including BEC, provide for oral assessments. These are not always readily accepted by employers because, it is claimed, of the greater difficulty in this type of assessment of comparing levels of performance.

The Department of Education and Science has established an Assessment of Performance Unit with national responsibilities for research and evaluation of assessment procedures. In the short term these are unlikely to be applied to vocational courses for office workers. The Further Education Curriculum Development Unit, also established by the DES, could decide in the future to undertake some form of review of how assessment in business education operates.

Overall the HMIs on behalf of the DES watch over the standards of courses and report regularly (but not usually publicly) on the standards achieved. It is already known that an interim evaluation of BEC General Awards, offered for the first time in 1978-79, is being undertaken by the DES.

SECTION SEVEN

REPORT OF THE VOCATIONAL EDUCATION GROUP

TERMS OF REFERENCE 55

MEMBERSHIP OF THE VOCATIONAL EDUCATION GROUP 55

BACKGROUND STRUCTURE 56

- West German Secondary Schools 56
- The Berufsgrundbildungsjahr (BGJ) - basic vocational training year 57
- The Berufsvorbereitungsjahr (BVJ) - preparatory vocational training in Nordrhein-Westfalen and the Berufsbefähigungslehrgänge (BB) - vocational preparation course in Berlin 59

PARALLELS IN THE UNITED KINGDOM 61

THE CURRICULUM 63

- Curriculum Development and Associated Staff Development in the Federal Republic 63
- Berufsgrundbildungsjahr : National Planning 64
- Berufsgrundbildungsjahr : Local Planning - Berlin 64
- Berufsgrundbildungsjahr : Local Planning - Nordrhein Westfalen 67
- Berufsvorbereitungsjahr : Federal Initiative - BIBB 67
- Berufsvorbereitungsjahr : Nordrhein-Westfalen 67

APPENDICES:

- A Berufsgrundbildungsjahr - Professional areas as defined at the conference held by the Ministry of Culture on 19.5.78. 69
- B) Sample timetables for components 70
- C) in the vocational training year programme 71

TERMS OF REFERENCE

1. The group defines vocational preparation as a continuing process by which a young person can gain, inter alia, the following:

   a. A platform on which to base an informed career choice
   b. An adequate basis and foundation on which to enter further training.
   c. An introduction to the world of work.
   d. A preparation for transition from school to work.
   e. An orientation towards a group of vocations which will provide adaptability and vocational mobility.
   f. The development of social skills for adult life generally.

   The process of vocational preparation can be seen as a continuum in which both secondary schools (allgemeinbildende schulen) and further education colleges (berufsbildende schulen) have a role.

MEMBERSHIP OF THE VOCATIONAL EDUCATION GROUP

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BACKGROUND STRUCTURE

West German Secondary Schools

3. The allgemeinbildende schulen participate in vocational preparation in the following ways:

   a. Through the general (subject) education programme.
   b. Careers advice and counselling received through the Arbeitsamt (Local Office of Employment of the Federal Institute of Labour).
   c. The school subject "Arbeitslehre" (an introduction to the world of work). This is very limited, perhaps two hours per week and only in the Hauptschule, or Gesamtschule.
   d. Praktikum (Practical application) or work experience schemes.
      There is no uniform pattern for this. In Düsseldorf a sophisticated pilot work experience scheme has been developed. In the ninth year all Hauptschule (secondary modern schools), but none from Realschule (technical grammar) or Gymnasia (grammar) pupils spend two weeks in 600 firms in the city. Teachers accompany their students. The scheme is organised by the Stadt Düsseldorf inspectorate. The students spend one week working in the section of their choice, and a second week in a totally different occupation. This practical work experience is preceded in the seventh year by visits to firms, and in the eight year by a more exploratory visit, when a specific topic (such as marketing, distribution or social questions) is investigated. Similar schemes are being pioneered in other states.

4. Generally the prevailing view of education in secondary schools is the "classical" or "humanistic" view. The curriculum is organised on a subject basis and appears to make little direct contribution to vocational preparation, though career guidance and praktikum are clearly important.

5. We found little evidence of there being much contact, either at institutional or individual level, between staff and pupils of allgemeinbildende schulen (secondary schools) and berufsbildende schulen (further education colleges). There appeared to be little realisation of the possibilities in this for pupils of allgemeinbildende schulen, such as the availability of practical experience and of workshop facilities in the Berufsschule (part-time vocational schools) the opportunity to explore the various vocational Berufsfelder, (practical fields) and the chance to become familiar with the new environment of the Berufsschule.

6. We also received evidence that industrialists felt that they had no means of influencing the secondary school curriculum, because their links are Federal, while schools are organised on the Land level.

The Berufsgrundbildungsjahr (BGJ) - basic vocational training year

7. As well as there being a trend towards raising the school leaving age to 16, it has also been felt that there is a need to give young people a general vocational foundation course. There is a movement towards introducing the Berufsgrundbildungsjahr (the Berufsgrundschuljahr in some states), though this is not without controversy.

8. The BGJ is designed as a substitute first year of apprenticeship training, though in practice there may be problems in linking it to the existing second and third year programmes. The aim of the BGJ is to help to qualify and orientate young persons towards a vocation and to increase their adaptability and vocational mobility.

9. The BGJ has resulted from a grouping of the 460 classified trades in the Federal Republic of Germany into 13 broad categories (see Appendix A). Such categories are broken down into Schwerpunkte (i.e. a specialisation within each category) giving nearly 30 separate routes through the first year of apprenticeship. Specialist training in each of the 460 classified trades still exists in the second and third years.

10. Each of the 13 categories of the Berufsgrundbildungsjahr is broken down into components, e.g. Fachtheorie (theory) and Fachpraxis (practical). Appendices B and C illustrate such a breakdown for Wirtschaft and Verwaltung (business studies and administration) and Elektrotechnik (electrical engineering). The Fachtheorie and Fachpraxis are supplemented by general studies, e.g. German, social studies, etc.

11. The BGJ can be operated on two models:

    a. Full-time within the Berufsschule, where most students do not have an apprenticeship contract with an employer, or
    b. On a co-operative model with Fachtheorie and general subjects taught in the Berufsschule and the Fachpraxis done in the factory training centres, where the students have an apprenticeship contract. In this form firms pay for the training.

12. It is not clear whether form a. above will make it easier for the student to get an apprenticeship. In some industries in some Länder, e.g. agriculture in Nordrhein-Westfalen and commerce in Berlin, the BGJ was accepted as the only route to an apprenticeship contract. In other industries and Länder, BGJ had not been accepted and there was evidence that students with it would have found it difficult to get an apprenticeship contract subsequently.

13. Industry has nothing against BGJ in principle, but considers it too theoretical. One industrial source said that under full-time BGJ a fitter would receive only one third of the training time he would have received under the traditional system, and even this training is in general metal work - not

specifically in fitting. Industry's worries were further compounded by the possibility of the raising of the school leaving age, leading to a further postponement of the age at which young people reach craft status.

14. Industry appeared to be more favourably inclined towards the co-operative model, although both forms follow the same framework curriculum (Rahmenlehrplan or RLP). It was argued by some that an increase in the proportion of time spent on practical working during the BGJ, approved in 1978, would cause many employers to regard BGJ more favourably.

15. On the other hand the education side favoured the introduction of BGJ precisely because the traditional schemes were too practical and did not give enough emphasis to general education.

16. The Länder tend to prefer the full-time model as it ensures that young people are kept truly independent of the productive process, they are treated as trainees, not production workers. Firms usually prefer the co-operative model because they have more faith in their own practical training facilities than in those of the Berufsschule.

In the group's view, the clearly kept distinction between theory and practice may contribute to the dispute. There seemed to be little move towards integrating (as opposed to co-ordinating) the two elements, and even less pressure to modify the general education component of the curriculum to appeal both to employers and to reluctant learners.

17. Does the selection of one of the 13 categories (and specialisation within) defeat the idea of a general vocational foundation year, particularly within the context of the preparation (or lack of it) received in secondary school? If an individual who has embarked on a BGJ course changes his mind, the specialist structure of the courses does not permit transfer into another. He would have to start over again. This is made particularly difficult by students having to change institution as well. One reason suggested for the specialist structure of the BGJ is that it is designed to meet the demands for most specific needs from the employers. But does the BGJ increase adaptability and vocational mobility? Most British further education colleges offer courses spanning a wide variety of vocational areas. British foundation courses and the policies of Technician Education Council and Business Education Council are more favourable to transfer from one course to another.

The Berufsvorbereitungsjahr (BVJ) - preparatory vocational training in Nordrhein-Westfalen and the Berufsbefähigungslehrgänge (BB) - vocational preparation course in Berlin

18. Three target groups can be identified within our terms of reference. They are:

a. Those from deprived homes, including the physically and mentally handicapped from the Sonderschulen (special schools for handicapped pupils).
b. Unqualified school leavers who failed to get apprenticeships. This includes ex-pupils of the Hauptschule who fall into the low-achiever group, i.e. those pupils who have attended until the ninth grade but academically have only achieved the seventh grade. Such pupils would not have gained the Hauptschulabschluß (secondary school leaving certificate).
c. A small number of school leavers with qualifications but who, for various reasons, failed to obtain a training contract or a further education course.

19. It is generally recognised in Germany that most unemployed have received no vocational training.

20. BGJ is premature for the groups identified above. They do not require a foundation year but a Berufsvorbereitungsjahr (BVJ) - preparation year leading into the BGJ, i.e. they need orientation for further vocational training.

21. At BIBB (Berlin) a model approach was suggested for the BVJ. Its three main components are:

a. Practical/technical. In two phases -
   i) Orientation (six months) covering five different categories of work areas, e.g. wood, metal, electrical, clerical.
   ii) Inclination (six months) in which the individual makes up his mind which vocation to select on the basis of aptitude and desire.
b. Theoretical - to supplement the work done in a. above.
c. Social, involving the work of social-pedagogues and psychologists.
   The social aspect has two main objectives -
   i) To develop personal stability, self-confidence and realistic self-appraisal and
   ii) To socialise the individual's attitude towards the community and to develop traits of responsibility, co-operation and reconciliation and solving of problems.

22. This provision also occurs in the Städtische Schule für Electrotechnik in Düsseldorf. Three social workers are attached to the staff in a guidance capacity. In several cities social-pedagogues are employed to supervise the young people. They are concerned with young people in and out of school, and are not employed by the schools or colleges. This gave a ratio of one social-

pedagogue to about 80 students on the BVJ in Düsseldorf (1:1000 in Berlin) - very impressive by English standards.

23. The Düsseldorf scheme covers electrical engineering, metal trades and woodwork. The course was timetabled and taught in the conventional way. It appeared more difficult to motivate the native German students (most of whom had failed in Hauptschule) than the children of the Gästarbeiter (immigrant workers) who were keen to take the opportunity they were receiving.

24. In the Planck-Oberschule in Berlin, half the course time (BB) is spent in practical work with two course tutors who filled the stablising pastoral role taken by social-pedagogues elsewhere.

25. Apart from the Berufsschule models, further schemes are financed by the Department of Employment and run by:

    i) Chambers of Commerce
    ii) Sonderschulen (special schools for handicapped pupils)
    iii) Companies and Chambers of Trade (Handwerkskammer)
    iv) Voluntary welfare organisations, including the Church.

26. One company based scheme was organised at Henkel, Düsseldorf on a blocked basis, with the first three months in the factory, followed by two or four weeks technical vocational education in the firm's training school. Students attended Berufsschule on one day a week throughout the course for general education. There were problems of motivation - of the 15 students who started, only seven remained - but Düsseldorf is an area with little youth unemployment and those coming on the course are of very low ability.

27. Criteria for the success of each preparatory course includes that the young people should be able:

    a. To find a job.
    b. To, at a later stage, enter vocational training.
    c. To continue to work in a job.

    It may be argued that the principle of the Berufsvorbereitungsjahr is one which might be of benefit to all young people as part of a vocational preparation process, as opposed to being a rescue operation for those failing in Hauptschule.

PARALLELS IN THE UNITED KINGDOM

28. This section follows the order of the section on Background Structure, a commentary being given to certain paragraphs there. In many cases there are no parallels.

Paragraph 3

29. In England and Wales, secondary schools perform this role in the following ways:

a. A choice of specialism in subjects at end of third (age 13) and possibly fifth year (age 15).
b. Careers advice and counselling received through the Youth Employment Service (operated by the local education authority).
c. Craft subjects such as woodwork and metal work.
d. Some schools operate work experience but there is no uniform pattern. This usually depends on local initiative. There are a few experimental studies organised by the Trident Trust.
e. Courses linked with colleges of further education designed to contribute to vocational choice.

There are several models:

i) Certificate of Secondary Education (CSE) linked courses in subjects generally not offered in schools, e.g. typewriting, engineering etc.
ii) Vocational preparation 'taster' courses. Not examination based and often linked to general careers education in secondary schools.
iii) City and Guilds Foundation courses. Some offered wholly in secondary schools, some offered on a linked basis with further education colleges.

f. All schools have careers teaching staff and careers lessons as part of the school programme, though of varying effectiveness and quality.

Paragraph 4

30. The "classical" or "humanistic" view of education obviously exists in the United Kingdom, but more emphasis is currently placed on vocational preparation. There are larger numbers of practical subjects within the curriculum, particularly for the non-academic pupils. Few grouped courses are being developed.

Paragraph 5

31. The level of contact between secondary schools and further education colleges varies from none to well organised joint schemes. Over the last few years there has been a move towards improved contacts. Linked courses represent one element of

this, for example, with pupils attending colleges of further education as part of the School I programme. When CSE Mode III and City and Guilds Foundation courses are run on a link basis, curricula are jointly planned and taught. Careers lessons in School I often involve visits to further education colleges or visits by staff of further education colleges. Some college staff have school liaison roles.

Paragraph 6

32. Industry's ability to influence at a national level is restricted to Confederation of British Industry/Trades Union Congress schemes to encourage consideration of industry in schools, e.g. Schools Council industry projects. On a local level industry may become actively involved in the content and teaching of courses. Whereas for the non-academic student the school can influence the curriculum and therefore local links between industry and secondary schools will make a difference, the curriculum for 'O' and 'A' level students is in effect controlled by university dominated GCE boards.

Paragraphs 7-17 Berufsgrundbildungsjahr (BGJ)

33. As there is no compulsory post-16 education in the United Kingdom, there is no way in which the state can legislate for a uniform pattern of vocational education equivalent to Berufsgrundbildungsjahr (BGJ). However, there are some examples of first year training off-the-job in specific industries, usually stimulated by the industrial training boards (ITBs). The training component is the responsibility of the ITB as it is designed by them and counts towards their training requirements for craftsmen. The education component is the responsibility of the Joint Advisory Committee (JAC). Most students are already in employment. Insofar as the Certificate of Further Education (CFE) has achieved exemption from the education component of the first year of craft training, it can be considered as an equivalent to BGJ. As there is no training component to CFE it can never be equivalent to the first year of an apprenticeship. To a much lesser extent foundation courses may give exemption from parts of the first education requirement of apprenticeships, but to a greater extent they are intended to assist in the choice of jobs.

Paragraphs 18-27 Berufsvorbereitungsjahr (BVJ)

34. We cannot define exact parallels to either BGJ or BVJ in the United Kingdom. Both the Certificate of Further Education and foundation courses straddle the curriculum of these German courses in some respects, and furthermore are a matter for local initiatives and not part of a national policy change. Not even individual LEAs necessarily attempt to impose a uniform policy on individual schools or colleges within their control. The responsibility is often vested with headmasters and principals. There seems to be a fairly good parallel in intention between the BIBB and BVJ, and Youth Opportunities Programme (YOP) in the United Kingdom. There are many different forms of Training Opportunities Scheme (TOPS), Holland schemes,

etc. none of which is parallel with BIBB. Unified Vocational Preparation (UVP), though a small scale scheme at present, is an attempt to give further education/training to young people in unskilled jobs who have not previously been catered for in the United Kingdom. However, it differs in philosophy from the German approach in that it hopes to integrate general and vocational education/training. As in the case of BVJ, the scheme can take place in a variety of locations.

There is no equivalent to the school based BVJ we saw in Düsseldorf. There is a range of different, variously funded courses organised by individual colleges to help disadvantaged young people make the transition from school to work.

THE CURRICULUM

Curriculum Development and Associated Staff Development in the Federal Republic

At a very general level, we knew initially that the Federal Ministry for Economic Affairs was responsible for the training side of the "dual system", and that individual Länder are responsible for what takes place in Berufsschule. What emerged during the visit was that this division may be symptomatic of a far sharper categorisation of learning into "theory" and "practice" than is used in the United Kingdom. It also means, of course, that we have at least two distinct curriculum development processes to consider. We obtained little information on the process by which the skeleton proposals Rahmenlehrplan (RLP) for vocational schools are harmonized with the regulations are training programmes for trainees within firms.

This is to assume that a coherent development process exists subsequent to the agreement of general aims. At Land level, the position seemed to be very variable. At the Berlin Senate, we were told that some Länder issue detailed interpretations for guidance with respect to the RLP, giving detailed objectives and suggestions as to suitable methods, assessments procedures, and learning aids. Other Länder simply proclaim the general plan, rather than translating it into more specific objectives. Whether the lack of translation is due to a lack of machinery (affected by geographical factors, amongst others) or a different view of the teachers' role is perhaps a matter for debate. In any case, because of the variations between the Länder, our experience in Berlin and Nordrhein-Westfalen are discussed separately in what follows.

Although we are not able to say much about the curriculum development process on the training side of the equation, there was some suggestion that, as in some Länder, there may be no standard process to describe. In other words, individual firms and their training officers may be left to their own devices when it comes to interpreting the general plan.

Berufsgrundbildungsjahr : National Planning

With respect to the planning of the full-time vocational foundation year (BGJ), the general outline of the training side is agreed at Federal level between representatives of employers, unions, and the BIBB. Although individual Länder have the legal right to design the rest of the curriculum independently, they have agreed to co-ordinate it through the KMK. A joint co-ordinating committee is responsible for harmonization, but this is at a general level and cannot be detailed enough, for instance, to ensure the individual practical skills are learned at approximately the same time as the relevant theory. At a local level, whether such co-ordination is possible depends on local negotiations and relationships. Where these are lacking there is sometimes pressure from the teachers to base the whole course in the Berufsschule for this reason. However, in the building industry in some states, for instance, the theory and practical sessions have been "blocked", and a five-week practical period is followed by the appropriate theory in the Berufsschule.

The basis on which the Rahmenlehrplan (RLP) is designed was not clear, except that it involved delicate political negotiation. For instance, we do not know whether its general principles are derived from some kind of task analysis of the jobs in question, whether they work from the old curricula and attempt to modify them, or to what extent general educational principles are applied. However, this is also a question which might well be asked with respect to much of the planning in the United Kingdom. In the United Kingdom, this general planning is undertaken by joint advisory committees at craft level composed of teachers, relevant ITBs and government departments.

Berufsgrundbildungsjahr : Local Planning - Berlin

At the Berlin Senate Planning Group, Berufsschule curricula are developed by planning teams for each of the vocational areas. As a rule, each group comprises about three teachers, who are released from their teaching work for about one third of the week, plus a full-time co-ordinating officer who is also a teacher, but released for most of his time. About 150 teachers are involved in the process. The teachers usually work on the basis of a draft drawn up by the permanent staff.

Ideally the planning team takes advice from industry and the unions, reads the literature, and then maps out a rough timetable, breaking the course down into approximate learning areas. After this they write more precise objectives and suggest learning methods, aids and assessment procedures.

The new curriculum is not field tested, but there is accompanying research work and previous experience on which to draw. The planning teams say that it would be possible to change the provision if it is found to be of too high or too low a level. However, the main argument is that because practising teachers are involved they are likely to get the curriculum right in the first place. Bearing in mind that the Berufsschule are themselves categorised according to vocational areas, it is possible

that in a city state like Berlin all the teachers involved in the planning come from the same establishment. It was therefore argued, probably realistically, that planning was affected by the knowledge of facilities available, and the knowledge of forthcoming plans affected the provision of facilities.

From the examples the group saw, it is evident that Berlin is adopting the "behavioural objectives approach" in a thorough manner. It seems that a set of objectives is given for each general aim, and that there is tacit encouragement to teach each objective separately because methods, aids, and checks are specified or suggested for each objective. (Although this procedure certainly occurs in Britain, there is considerable debate about whether it is sensible to suggest a "one to one" relationship between aims, objectives and learning activities, or a linear progression from the former to the latter).

Although the planners indicated the supposed degree of difficulty of objectives in both the cognitive and psycho-motor domains, it was interesting that they had not yet managed to specify any affective objectives. This was particularly interesting in view of the fact that those people the group met emphasised the importance of creating the right attitude towards working life in the young people. It was felt to be very difficult to formulate "affective" objectives for such vocational areas as electrical engineering, although it was possible. This emphasised a point which recurred several times, namely that vocational skills are nearly always equated with technical skills. In the past this has been the common position in the United Kingdom, but there now seems to be a growing awareness of a number of social and personal abilities which are not only vocational in the sense that they contribute to the success of an individual as a worker, but are also to some extent common between vocational areas.

The group was told that, despite the objectives approach being new to Berlin, it was not anticipated that there would be much difficulty in enabling teachers to operate the new curricula because a. of the involvement of many of them in the planning, and b. the fact that, for the past five years, it has been included as part of the teacher training programmes. A visit to a Berufsschule confirmed the existence of a process of staff development through involvement in curriculum development. Usually, about 10 teachers (of about 150) from each Berufsschule are involved in curriculum planning, and an allowance of approximately five-eight per cent of total teaching time is available for such work. Because of this, it was argued, the curricula arrived in an "optimum form" for implementation by the teachers, though heads of department are responsible for dissemination of the curriculum, and advise (where necessary) on its implementation. It was evident, however, that objectives are derived from aims and then taught, for the most part, in the order in which they have been set down.

In the United Kingdom there is a growing teacher involvement in curriculum development - usually to fulfil guidelines set down by examining bodies. This mostly takes place with little or no remission of an individual's normal teaching load. Curriculum planning is not usually sufficiently long term in the United Kingdom for it to be possible to include it as part of teacher training programmes as in Germany.

Despite the detailed advice given, it was emphasised that the planners want to leave some room for manoeuvre to teachers, because it is their job to do more than pass on knowledge. Although experiments are suggested to facilitate the learning of each objective, alternative experiments are available from such sources as BIBB. Teachers are also free to devise their own.

When curricula have been worked out in detail, they are checked by a full-time official of the planning unit to see that they correspond to and are compatible with the skeleton plan (RLP), they are then passed to a supervisory board of the Senate for approval. Once approved they go on for a trial period in the Berufsschule, after which the curriculum becomes mandatory. There is no equivalent process in the United Kingdom. The guidelines published by the Joint Advisory Committee (JAC) are sent to further education colleges, which develop their own detailed teaching programmes. There is no equivalent formal system of feedback or approval of teaching programmes.

With regard to staff training in general, all the teachers had some industrial experience. However, whereas the majority of existing teachers have come up through the apprenticeship system (80 per cent of the present staff), it is likely that future teachers will have gone straight to university from the Gymnasium. Although they would be required to have a teaching qualification together with at least a couple of years industrial experience, it was not clear that this industrial experience would be similar in nature and level to that which the young people they would be teaching would experience.

In the United Kingdom most technical teachers have industrial experience. However, the principal further education teachers' union in the United Kingdom has a similar ambition to make further education teaching a graduate profession. Similar anxieties are expressed in the United Kingdom about where the craft teachers of the future are to come from.

In addition to Fachtheorie and Fachpraxis there is a third element of the curriculum. This is a general education component formulated along the lines of conventional school subjects (German, mathematics, politics, etc). It is designed by a separate group - with stronger links with the secondary school system than with industry - and with the same provision made for students in all vocational areas. There was no suggestion that it might be possible to continue the general education of young people through their vocational interests. This is, of course, a growing - though debated - trend in the United Kingdom where many courses are designed as an integrated whole.

Considerable thought has been given in Germany to the amount of time and resources required for development from the general plan to specific proposals. Furthermore, there has been a political willingness to provide the required resources. Although Berlin has some accidental advantages in this respect (particularly its nature as a city state and a bonus of staff hours resulting from a change in the starting time of the school year), this does seem to be in marked contrast to what usually happens in the United Kingdon, where frequently, if not inevitably, the development agency and the resourcing agency are separate, and where the organisation and timing of educational change result more from an examination of administrative issues than a calculation of the necessary curriculum development procedures.

Berufsgrundbildungsjahr: Local Planning - Nordrhein Westfalen

A group of six - eight teachers, led by an inspector, hold a series of meetings at the Kultusministerium to construct the Land's plan. This may take 10 to 20 meetings. This plan is then disseminated to the five regions within the Land. Teachers within each region organise the implementation of curricula by developing their own more detailed plans. (Some specialist areas may have to be developed centrally). Teachers get three or four days release per year for this work.

Berufsvorbereitungsjahr: Federal Initiative - BIBB

From the curricular point of view courses are seen as having three main parts: practical, theoretical and socio-pedagogic. Although these parts are not necessarily split, in the practical element they make small objects to give motivation and a sense of achievement (usually lacking previously) and the theoretical element could occur in the workshop or in a separate teaching course. The socio-pedagogues are trained on a different route from conventional teachers and "do not teach anything, but rather analyse what others do". In the United Kingdom, the three divisions of such a curriculum would probably be something like personal, social and vocational studies.

Berufsvorbereitungsjahr: Nordrhein-Westfalen

Once again, curriculum development was characterised by heavy staff involvement. We were told that 35 teachers and five advisers had been involved in the curriculum development. One adviser was from the Kultusministerium; four from the office of the Economic Minister of the Land.

Each Berufsschule gets a series of circulars about new courses, these go into a file which is seen as a complete list of possibilities, from which teachers choose that which is appropriate for their group. It is the "professional duty" of teachers to follow the book, so there is no problem about dissemination. Each teacher gets a copy. This contrasts strongly with the United Kingdom where there are difficulties in disseminating information on many courses.

Since the Berufsschule the group visited had been a pilot college for the scheme, staff development was obviously a minor problem. Elsewhere, existing teachers were to receive a one or half-day per week in-service course for one year, in preparation for the new course. New teachers will have received such preparation during their pre-service course if they were interested in the teaching of less able students. A series of regional conferences (within the Land) composed of groups of similar teachers had also been arranged in support of the new proposals. Pre-service and in-service courses on new curriculum developments are not available on this scale in the United Kingdom.

Team meetings are also held in Berufsschule, but there is a tendency to hold separate meetings of "theoretical" and "practical" teachers (even though this is not officially intended). Thus the separation tends to be between practical and theoretical, instead of the United Kingdom division between subject areas, whether practical or theoretical.

It was exphasised that such "preparation courses" are not part of a vocational qualification, but are intended to enable young people to gain access to such training courses. From the curriculum point of view, the design and implementation of the course seems conventional. It may be that some of the success of such courses derives from the apparent absence of practical work in the secondary school curriculum.

APPENDIX A

Berufsgrundbildungsjahr

Professional areas as defined at the conference held by the Ministry of Culture on 19.5.78.

Vocational Sectors	Specialisation
I Business studies and administration	Sales and marketing Customer relations Office economy and mercantile administration Law and public administration
II Metal trades	Production techniques Designing techniques Planning and installation Metal techniques Motor vehicle techniques
III Electrical engineering	
IV Building and construction	
V Woodwork	
VI Textile and clothing	
VII Chemistry, physics and biology	Laboratory techniques Production techniques
VIII Printing	Printing layout and design Processing of printing Book-binding
IX Dyeing and interior design	
X Hygiene	
XI Health	
XII Nutrition and home economics	Catering and hotels Home economics Confectionery Meat processing
XIII Agriculture	Husbandry, veterinary work, Plants

APPENDIX B

Timetable for the Foundation Year

Area: Economy and Administration

Subject:	Hours of Instruction per year	
Business studies		240
Economics		120
Basic mathematics		200
Accounting	80	
Mathematics including statistics	120	
Information processing		160
Text processing	120	
Data processing	40	
Typewriting		80
Vocational Sector		800
Point 1		
Sales and Advertising		240
Economic law	80	
Marketing	80	
Advertising	80	
Point 2		or
Office Practice and Mercantile Administration		240
Economic law	80	
Office practice	80	
Typewriting	80	
Point 3		or
Law and Public Administration		240
Law	120	
Administration	120	
Instructions in Vocational Sector Total:		1040

APPENDIX C

Distribution of Teaching

Area: Electronics

For training in:	Hours of instruction per year	
	Industry	Crafts
Specialist theory	320	520
Maths (specialist calculations)	80	140
Physics/chemistry	40	70
Basic electronics	100	200
Materials for electronics	20	30
Technical drawing	80	80
Specialist practicals	720	520
Use of materials and connecting techniques	300	160
Switching and measuring	420	360
Total hours of instruction	1040	1040

SECTION EIGHT

CONCLUSIONS AND SUGGESTIONS FOR FURTHER STUDY

TECHNICIAN EDUCATION GROUP 73

BUSINESS EDUCATION GROUP 74

VOCATIONAL EDUCATION GROUP 77

TECHNICIAN EDUCATION GROUP

The group would like the exercise to develop on equivalence and level, particularly on content and method in mechanical engineering as the overall objectives of the exercise are seen as preliminary to hard bargaining on equivalence within the EEC.

The systems have in common: curriculum methodology based on a systems approach. The systems are different in terms of relative co-ordination, particularly Federal and Länder and KMK curriculum centres. Relative diffusion in the United Kingdom is focussed on institutional autonomy and validating by central agencies rather than examining. German educationalists are struck by the non-compulsory aspect of UK 16-19 education. On the other hand they are still questioning their own compulsory system viz a viz the duty of youth to attend school or the right to leave apprenticeship. The philosophy of compulsory day release - and perhaps compulsory training on the industrial side - is likely to predominate in Germany. In the German view, the English need formal regulations and a full range of apprenticeships in order to achieve the percentage of "take-up" of Germany. Both sides emphasise that the TEC "supermarket" (Higher TEC beyond 18) is basically different from apprenticeship plus experience and technician training in Germany.

BUSINESS EDUCATION GROUP

The following conclusions were agreed after discussion between the German and British educationalists:

The Federal German Republic has a greater acceptance of formal apprenticeships, vocational education and training for office workers by government, employers, trade unions and workers than is the case in England and Wales.

Mobility between different kinds of office occupations during the training period is much less in the FRG than in England and Wales. This was seen as largely the result of the existence of the formal apprenticeship period.

Procedures by which agreement between interest groups on particular apprenticeship schemes is reached in the FRG are more formal and concerted than in England and Wales. All aspects of the system are defined by law; legal sanction exists and is used in case of breach of the law.

In the FRG specific Federal government funds have been made available for curriculum development. In England and Wales most funds have come from examination fees. LEA funding exists but is not easily quantifiable.

Considerable effort is being devoted in the FRG to the development of combined education and training schemes which link the Berufsschule school and work-based elements but little progress has been made so far. In England and Wales by comparison, the central machinery for such co-ordination does not exist. However, in England and Wales, individual college and company initiatives forge such links. The co-ordination of education and training across an industry is being introduced in the major banks. Such examples are probably more fully developed than in the FRG. The German group said they would welcome the development in the FRG of the type of links formed locally in England and Wales between some college staff and local employers.

Greater attention than in the past is now being paid in England and Wales to how courses are taught and to adopting teaching methods to meet specified vocational needs for office workers. A similar development was observed in the FRG.

The FRG Länder provide recommended text books for the majority of courses, a selection from which must be used for teaching purposes. In the UK no attempt is made to limit text book choice. This freedom may well result in there being no text book or books which are recognised as specifically relevant to a particular business studies course or part of the course.

From the limited information available, it appears that more effort is being devoted in the UK to producing teaching aids and encouraging staff to develop their own.

The two business schools visited (one old, one new) in the FRG had fewer teaching aids and technician/MRO back up available than the group would expect to find in comparable UK colleges.

Employers have a formal role in examining and in the whole training process in the FRG which has no parallel in the UK.

There would appear to be more development work presently undertaken in the UK into assessment procedures than is the case in the FRG.

Students and employers in England and Wales usually select vocational courses of different levels for employees on the basis of the student/employees' prior educational qualifications. In the FRG the group found examples of highly qualified students (who had completed their abitur), studying in Berufsschule on courses designed for 15+ students with much more limited educational backgrounds. There also appeared to be acceptance of all apprentices for the job of the same name (Industriekaufmann) undertaking the same basic educational package, the only concession being some reduction in the total length of apprenticeship.

The FRG approach to block release appeared more imaginative than in the UK. Further investigation would be of considerable interest to see what can be learnt.

The group found little information on the purpose or effect of attempts in the FRG to raise the school leaving age. Any decisions in this area will affect the basis of vocational training. Suggestions were made that the Hauptschulen and Realschulen had inadequate resources to cope with the problem. If information is not available from other sources, further enquiries are recommended.

The group would welcome more information about the way in which complaints procedures operate in the two countries and the way in which this may affect the attitudes of teachers and trainers to curriculum implementation.

How students of the foundation year (designed for office workers) in the Berufsschule will obtain practical experience of office procedures and equipment was identified as an area of mutual interest. Both the British and German groups felt that further investigation into the ways in which each country attempts to provide practical work experience for pre-employment, full-time students taking commercial courses, would be of interest.

Further comparative information on approaches to in-service staff development, including the use of periods in industry for teachers, would be helpful.

Comparative studies of the content of the curriculum for identified groups of business students were considered to be of interest, particularly studies of common core areas of study where these have been identified in England and Wales and in Hessen and Baden-Württemberg in the FRG.

There was general support for initiatives at Government level which would make possible further information on the equivalence of vocational courses in the two countries.

Attempts are being made in the UK to identify a common core of studies relevant to broad occupational categories within office work with options providing specialist studies for particular jobs. The information given to the group in Germany suggested that this was not possible. Further discussions would be welcome.

VOCATIONAL EDUCATION GROUP

The major difference between British and German education is that the latter is much more centrally controlled. Most differences in detail stem from this major fact. This central co-ordination, in turn, derives from the fact that, after compulsory full-time schooling, young people must attend a Berufsschule, if they are not in any other form of further education. Compulsory attendance (for one day per week) at a Berufsschule lasts as long as vocational training lasts. Young people who do not have training contracts must, as a rule, either attend Berufsschule for three years part-time, or attend a full-time course (a BVJ) for one year.

The fact that the funding agency and the curriculum agency are one and the same allows the organisation and deployment of human resources in a more coherent way then in this country. The German system devotes an impressive volume of resources to curriculum development, and acknowledges that the process has to be planned and timed if any development is to be successful. On the other hand, it may be that the adoption of certain methods of categorising the curriculum, while they may contribute to clear organisation, may also embody some unconsidered assumptions about the learning styles of young people.

There seems to be no German equivalent to the Manpower Services Commission (MSC) as a funding agency which can directly encourage courses in colleges. The Bundesanstalt für Arbeit is comparable with the MSC in other respects, but it does not pay for courses in Berufsschule.

The centrally organised curriculum within its legal framework provides for most German students. We feel that the UK system, with its freedom for local initiative, though providing for fewer people may - in some cases - cater for their needs better.

We were struck that there appeared to be no courses in Germany aimed at helping vocational choice. Once choice is made however, their methods of career development appear to be very systematic.

We were struck that there were no examples of Berufsschule acting as a link between secondary schools and industry. The freedom of colleges to take local initiative in the UK seems to make such contacts possible.

More detailed studies of some of the above comparisons should produce valuable comparative reports from which both systems may benefit.

SECTION NINE

SEMINAR TIMETABLE AND LOGISTICS

9A	TIMETABLE OF THE SEMINAR	79
9B	LIST OF INSTITUTIONS VISITED, OR WITNESSES RECEIVED FROM, DURING THE SEMINAR IN THE FEDERAL REPUBLIC OF GERMANY AND ENGLAND	80
9C	MEMBERSHIP OF THE SEMINAR	82

9A

TIMETABLE OF THE SEMINAR

December, 1977	Inital agreement on joint-funding.
January, 1978 - May, 1978	Initial planning.
18-23 June, 1978	Planning tour of Federal Republic of Germany by John Whybrow and Russ Russell.
August - September, 1978	Selection of English and Welsh experts.
7 October, 1978	One-day briefing meeting in London for the English/Welsh party.
15-21 October, 1978	Study tour of Federal Republic of Germany by the English/Welsh party.
10-12 November, 1978	Meeting of English/Welsh party at Coombe Lodge to agree a draft report.
November - December, 1978	Selection of Federal Republic of Germany experts.
12 December, 1978	One-day briefing meeting in Köln for the Federal Republic of Germany party.
3-8 January, 1979	Study tour of England by the Federal Republic of Germany party (overlapping with)
7-10 January, 1979	Joint seminar of the two parties to discuss the draft report.
February - April, 1979	Receipt of final drafts from rapporteurs, letters, comments and notes from participants.
May - September, 1979	Editing of Report.
October, 1979.	Publication of Report.

9B

LIST OF INSTITUTIONS VISITED, OR WITNESSES RECEIVED FROM, DURING THE SEMINAR IN THE FEDERAL REPUBLIC OF GERMANY AND ENGLAND

A.E.G. Telefunken,
Essen

Ausbildung Zentrum,
Henkel,
Düsseldorf.

Ausbildung Zentrum,
Manesmann,
Düsseldorf.

Berlin Senator für Schulwesen
Planungsgruppe Oberstufenzentrum (OSZ)
Stresemannstraße 72,
1000 Berlin 61.

Bundesinstitut für Berufsbildung,
Fehrbelliner Platz 3,
Berlin 31.

Daimler Benz,
Bad Cannstatt,
Stuttgart.

Fachschule für Technik,
Der Stadt Essen.

Gewerbl Technikerschule,
Schwanenkampstraße 53,
4300 Essen.

Gewerbeförderungsanstalt der Handwerkskammer Düsseldorf,
Vollmerswerther-Straße 75,
4000 Düsseldorf.

Industrie-und Handelskammer,
Unter-Sachsenhausen 10-26,
5000 Köln 1.

Kultusministerium,
Nordrhein-Westfalen,
Völklingerstraße 49,
4000 Düsseldorf.

Kultusministerkonferenz,
Nasse-Straße 8,
Bonn.

Max-Eyth-Schule,
Gewerbliche Berufs-und Fachschule,
Fritz-Elsas-Straße 29,
D7000 Stuttgart.

Ministerium für Kultus und Sport,
Baden-Württemberg,
Schlossplatz 4,
D7000 Stuttgart.

Plank Berufsschule für Elektrotechnik,
Osloerstraße 23,
Berlin.

Städt Düsseldorf Schule für Elektrotechnik,
Redinghoven-Straße 16,
Düsseldorf.

Städt Kaufmännische Schule II,
Suitbertusstraße 163-165,
Düsseldorf.

Theorder Litt Berufsschule,
Berlin.

Werner Siemens Schule,
Stuttgart.

Wilheim-Maybach-Schule,
Gnesener Straße 44,
7000 Stuttgart - Bad Cannstatt.

Bristol Youth Opportunities Centre,
Bathurst Wharf,
Prince Street,
Bristol 1.

Business Education Council,
76 Portland Place,
London W1N 4AA.

City and Guilds of London Institute,
46 Britannia Street,
London WC1X 9RG.

City of Bath Technical College, (Avon County),
Avon Street,
Bath BA1 1UP.

Engineering Industry Training Board,
54 Clarendon Road,
Watford WD1 1LB.

Further Education Curriculum Review and Development Unit,
Department of Education and Science,
Elizabeth House,
York Road,
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Further Education Staff College,
Coombe Lodge,
Blagdon,
Bristol BS18 6RG,
Avon.

Garnett College for Teachers in Further Education (ILEA),
Downshire House,
Roehampton Lane,
London SW15 4HR.

Inner London Education Authority,
The County Hall,
Westminster Bridge,
London SE1 7PB.

Manpower Services Commission,
Selkirk House,
166 High Holborn,
London WC1V 6PF.

Paddington College (ILEA),
Paddington Green,
London W2 1NB.

Royal Society of Arts,
18 Adam Street,
Adelphi,
London WC2N 6AJ.

South Bristol Technical College, (Avon County),
Marksbury Road,
Bedminster,
Bristol BS3 5JL.

Technican Education Council,
76 Portland Place,
London W1N 4AA.

Representatives of the following industries also met the seminar:

Bristol Aerojet Ltd.
Rolls Royce (1971) Ltd.
Westland Helicopters Ltd.
British Aerospace Ltd.

9C

MEMBERSHIP LIST

Mr. P. Abbott	Inspector for Further & Higher Education, Inner London Education Authority, County Hall, London SE1 7PB.
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Mr. A.C. Hutchinson	Principal, Paddington College, Paddington Green, London W2 1NB.

+ Mr. Allan Jones	British Council, (London), 10, Spring Gardens, London SW1A 2BN.
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Herr Leitender Regierungschuldirektor F. Köstering	Regierungspräsident, Detmold, Leopold-Straße.
Herr Oberstudiendirektor Küchler	Gewerbeförderungsanstalt der Handwerkskammer, Vollmerswerther-Straße 75, 4000 Düsseldorf.
Herr Ministerialrat Dr. Lammert	Kultusminister. Nordrhein-Westfalen, Völklingerstraße 49, 4000 Düsseldorf.
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Herr Oberstudiendirektor Mayer	Wilhelm, Maybach - Schule, Gnesener Straße 44, 7000 Stuttgart - Bad Cannstatt.
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Mr. M. Norman	Vice-Principal, York College of Arts & Technology, Dringhouses, York YO2 1UA.
Herr Professor E. Oppek	Landesstelle für Erziehung und Unterricht, Rotebühlstraße 133, 7000 Stuttgart.
Miss H.E. Orchard	Assistant Secretary, The Royal Society of Arts Examinations Board, 18 Adam Street, Adelphi, London WC2N 6AJ.

Herr Professor Heinz Karl Ott	Seminar für Studienrefarendare an beuflichen Schulen Hohe Straße 10, 7000 Stuttgart.
Mr. A. Owen	Director, Colchester Institute of Higher Education, Sheepen Road, Colchester, Essex.
+ Mr. David Parkes	Staff Tutor, Further Education Staff College, Coombe Lodge, Blagdon, Bristol BS18 6RG.
Mr. S.J. Peake	Lecturer, Hounslow Borough College, London Road, Isleworth, Middlesex.
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+ Organising Member

* Did not take full part in the whole proceedings

At the final seminar assistance with translation was provided by:

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